SEPTEMBER 1955

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FIREMEN

SIXTIETH YEAR · NATIONAL FIRE PROTECTION ASSOCIATION

VOLUME 22, NUMBER 9, COPYRIGHT 1955 NATIONAL FIRE PROTECTION ASSOCIATION PRINTED IN U. S. A.

82nd I.A.F.C. Conference
Omaha, Nebraska

(See page 16)

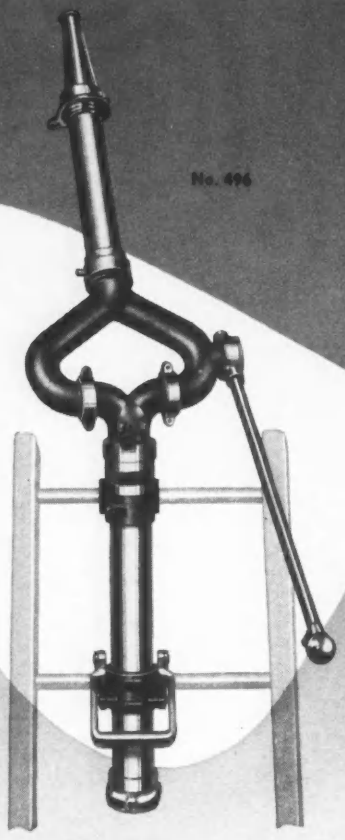
"Loving Sparky is Not Enough"

(See page 15)

. . . for plenty of "Fire-Power"

in hard-to-get-at places . . .

Use these together!



No. 496

Two sizes:
No. 1246 — 500 G. P. M.
No. 1247 — 1,000 G. P. M.

NEW "FOG-HOG"® NOZZLE

A hog for fog, or straight stream. Tremendous gallonage and projection . . . easy to operate. Solid fog cone—all degrees of fog, straight stream or shut-off are instantly available. Akron design insures bind-free operation at all pressures. Rockerlug base for easy, positive attachment to any 2½" thread.

"MONARCH" LADDER PIPE

Operates safely, vertically and horizontally. Attaches to any ladder with quick clamps. New safety stop limits horizontal traverse to 15 degrees each side, no strain or damage to ladder. Two stream shapers incorporated at base and top of discharge pipe. Torque guide arm for easy control over stream direction. Light-weight Akrolite construction, brass moving parts. More water, less friction loss!

No. 455

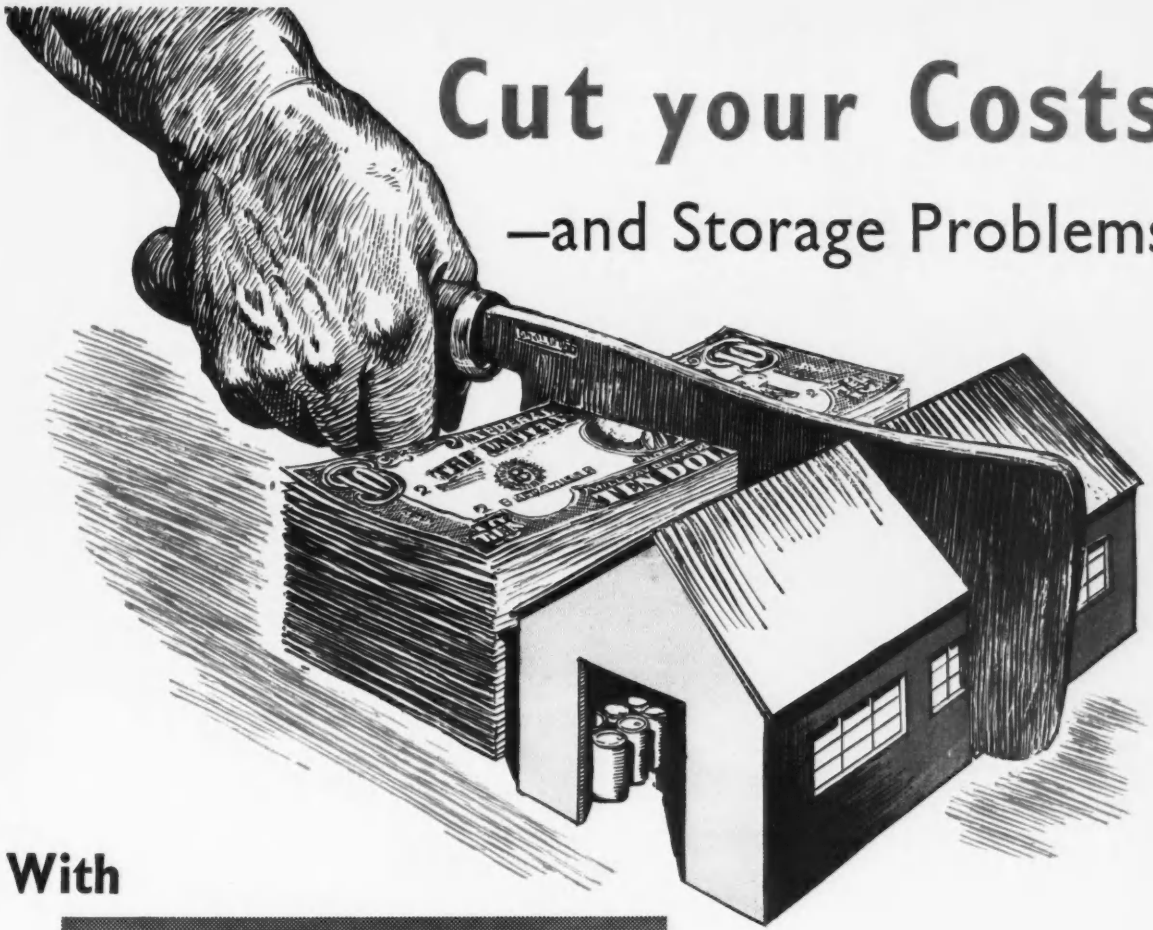
NEW! "E-Z GRIP"® HANDLE

Tough but light-weight aluminum handle attaches quickly to "Fog-Hog" nozzle (shown above). At the end of a 2½" line (with any nozzle up to and including 500 G.P.M.) you have a firm grip and perfect control. Akrolite handle and brass base. At last . . . a direct connection base with handles a man can really hang onto!

AKRON BRASS MFG. CO., INC. WOOSTER, OHIO

AKRON BRASS

FIRE FIGHTING EQUIPMENT



Cut your Costs

—and Storage Problems

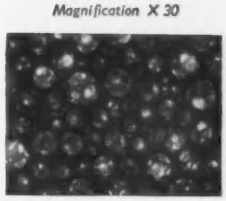
With

Nicerol

3% Foam Compound

THREE GALLONS of Nicerol and 100 gallons of water will produce over 1,000 gallons of Nicerol foam through a mechanical air pump. Changing and replacing strainers is reduced to a minimum, as Nicerol does not form sludge even after long storage. Its pH of 6·8 to 7·3 indicates neutrality, thus ensuring freedom from corrosion in valuable equipment, and in storage drums. A less obvious factor in Nicerol economy is its speed of effective action. Nicerol saved several hundred million dollars in World War II, and is still supplied under contract to several Navies and Air Forces throughout the World.

Magnification X 30



Here's why Nicerol Air Foam gives greater heat resistance

The minute closely-knit bubbles retain the maximum water content in a foam that is both adhesive and cohesive. This is the reason that air foam made from Nicerol resists fire breakdown, puts out more fire faster, and definitely outlasts the fire to prevent flash-backs.

***Nicerol*— THE LONGER LASTING AIR FOAM**

Keeps longer in storage — Puts out more fire faster — Outlasts the fire

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FIRE BALL Special

Meet the latest addition to the Ward LaFrance line of fine fire-fighting equipment!

It's the Fire Ball Special . . . a big city pumper, priced within small community and rural area budgets.

This completely new 500 G.P.M. pumper is powered by the new Chrysler Fire Power 183 H.P. engine . . . offers truly outstanding fire-fighting performance. The entire unit, body and chassis, is specially engineered and built by Ward LaFrance craftsmen to the same high standards of Ward LaFrance quality.

Regardless of the size of your fire department, you'll want to talk to the Ward LaFrance representative in your area. He'll show you how the Fire Ball Special can provide the kind of protection your community needs.

WARD LaFRANCE
TRUCK CORPORATION
Fire Apparatus Manufacturers for over 35 Years.

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DIRECT FACTORY BRANCH: 139th Street & Bruckner Blvd., New York 54, N.Y. Tel. CYpress 2-3300

EXPORT: Ward LaFrance International, Inc. Elmira, N.Y., U.S.A. Cable Address: "WARDTRUCK"

Fight Grass Fires *ON THE RUN* with a BARTON-AMERICAN TYPE UA FIRE PUMP

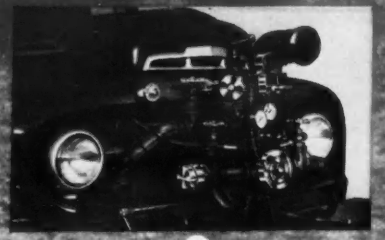
It's front-mounted, gear driven, centrifugal!

Now's the time you want to kill grass and brush fires *fast,* with no waste time or motion. And you *can* with the BARTON-AMERICAN Type UA Front-Mounted Pump, because you fight grass fires *on the move* . . . with *real power* and full mobility!

For fog guns and straight streams, it'll deliver pressures up to 400 pounds. Because the UA *is* front mounted, you can *drive right up* to ponds or streams for *fast* water supply. And you can carry as much as *600 pounds more water* or extra equipment on the truck than with midship pumps of the same capacity.

Today, get all the details on the great fire-fighting power and practical economy of the BARTON-AMERICAN UA Front-Mounted Fire Pump.

Write for your copy of UA Pump Bulletin 8330-B!



AMERICAN-MARSH PUMPS

BATTLE CREEK MICHIGAN

In Canada:
American-Marsh Pumps (Canada) Ltd., Stratford, Ont.

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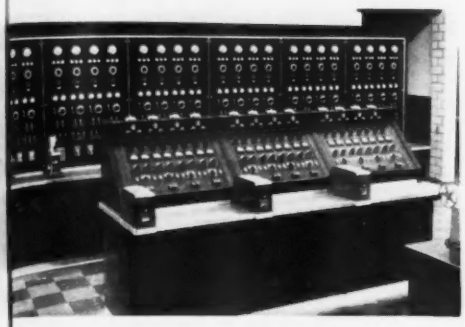
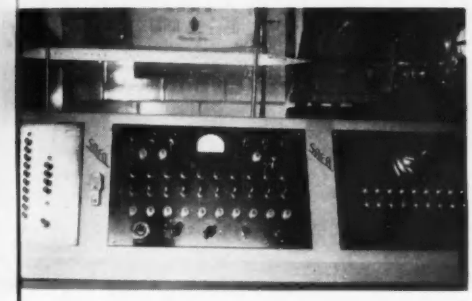


STYLE, SHAPE AND FINISH OF SAFA'S EQUIPMENT MATCH PERFECTLY, TO SUPPLEMENT EXISTING SYSTEM AT CINCINNATI, OHIO.



STATIC-FREE, SUPERB TONE QUALITIES UNEQUALED ON ANY SIMILAR SYSTEM, ARE WANTED FEATURES OF SAFA'S NEW INTERCOM.

SANDUSKY, OHIO, CHOSE SAFA CENTRAL-STATION EQUIPMENT FOR ITS OUTSTANDING FLEXIBILITY IN HANDLING A WIDE RANGE OF AUXILIARY NEEDS.

SAFA'S MODERN CENTRAL-STATION CONTROL PANELS CONTAIN EVERY SAFEGUARD KNOWN TO INSURE FULL-TIME READINESS FOR SPLIT-SECOND ACTION. THIS CUSTOM-BUILT CONTROL PANEL IS IN OPERATION AT LAFAYETTE, INDIANA.

You won't want to miss the two big events of 1955:

THE I.A.F.C. CONVENTION IN OMAHA, SEPT. 19-22

THE I.M.S.A. CONVENTION IN ROCHESTER, SEPT. 26-29

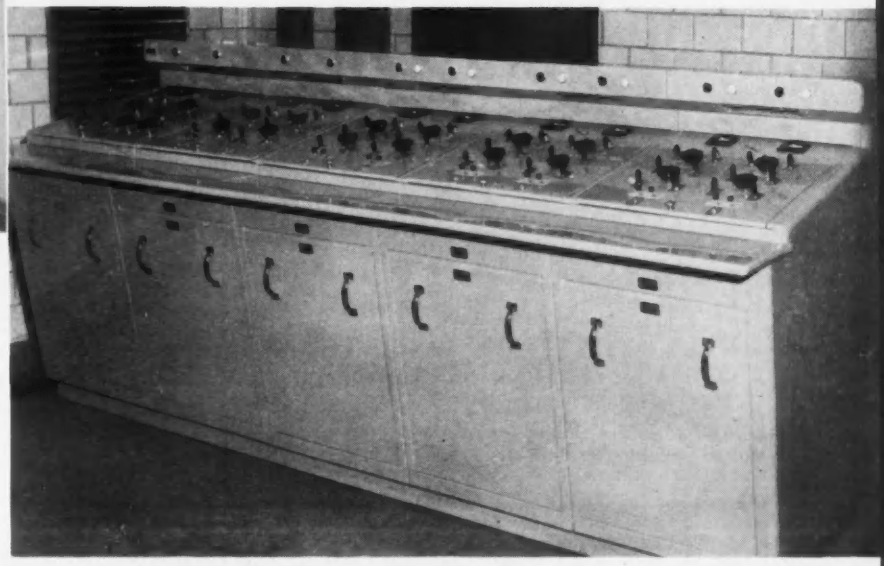
SAFA has prepared one of the most interesting displays of custom-built signal system equipment ever devised to add to your enjoyment of these significant meetings.

YOU WILL WANT TO EXAMINE AND OPERATE

- The new 10-Circuit Compositrol, Form 4
- The new 10-Station Master Intercom
- The new Register and Take-Up Reel
- The new Bench-Type Control Panel
- The new 8-Circuit Box Recorder
- The new 4-Digit Transmitter

Visit our display at each of these Conventions. Bring your questions with you. Let us discuss them and demonstrate the superior qualities of these newest Central-Station control units.

SAFA invites requests for detailed studies and recommendations. Send today for information. There is no obligation. Put Safa's planning and engineering skills to work for you, to bring your present system to a new high standard of effectiveness.



SAFA ALARM DIVISION *The Fyr-Fyter Co.* ORRVILLE, OHIO

Beautiful!

...and packed with practical, original *American* features that increase your fire-fighting effectiveness!

At American, you can select from a wide range of standard or custom-built models tailored to suit the needs of your community. Select the make of chassis you prefer and the body design you like best. Choose the Barton-American Pump you wish from a wide range of Midship models —two-stage, four-stage or the *new* single-stage types—or Front-Mounted Pumps with the *only* positive, inter-locking clutch that can't slip and leave you helpless at a fire.

If you're looking for superior performance, look at American's superior features!

See this engine—and all these features —at the Convention!

Contact your nearest American Representative soon!

American

AMERICAN FIRE APPARATUS CO.

FIRE APPARATUS CO.

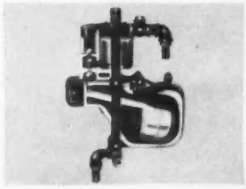
"Always Pioneering with Better Apparatus"

Main Office: Main Street Road, Battle Creek, Mich. • Plants at: BATTLE CREEK, MICH. • MARSHALLTOWN, IA.

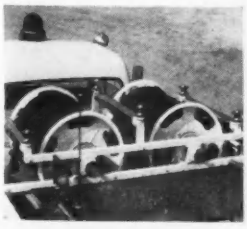
BARTON SUPER-FOG GUN—Famous for both long-range and close-up fog. Effective with normal and/or high-pressure, small or large volume straight streams or fog. Now with *new* refinements!

FROST-PROOF TANK OUTLET—Valve location in wide sump basin prevents possibility of freezing. Strainer baffles prevent swirl—insure fast, steady water flow. Entire valve unit easily removable for repair or tank clean-out.

NEW ENGINE GOVERNOR—An entirely new, superior Barton-American engineered design. It combines pressure regulation and engine speed control . . . instantly idles engine whenever pump for *any reason* loses its pressure.



FAST VACUUM PRIMER — Motor vacuum priming — now improved for 100% faster operation. Trouble-free —no lubrication or adjustments needed for life of unit. Furnished as part of dual priming when required.



IMPROVED ELECTRIC REWINDS — Pioneered by American . . . now with new features. Single starting motor. Convenient, quickly adjusted brake control. Superior reel design permits hose expansion under pressure, protects hose at couplings. No elbows —reduces friction.

CHOOSE FROM MIDSHIP OR FRONT-MOUNTED PUMP MODELS

You benefit from the finest of plant and testing facilities.

Packed with FIRE-FIGHTING POWER by HOWE

Blast upon blast of high pressure fog from this dual pumper will mean prompt control for many a blaze in Cradock, Va. High pressure lines may be used while the truck is in motion to discharge a flame-smothering 60 gallons per minute at 800 to 900 PSI. Two-stage centrifugal 500 GPM volume pump can be used at same time. The 600 gallon booster tank of this versatile triple combination truck puts it into fast, effective action the second it nears the scene of a fire . . . Pioneer in fire apparatus manufacturing, HOWE is the original designer of many features of today's improved equipment, including dual pumpers combining high pressure fog and volume pumps. The Cradock pumper is built at a cost to meet the needs of budget-minded communities and is engineered throughout to give firemen greatest control, safety and efficiency on the job. HOWE will build the type apparatus *you* need, on commercial or custom chassis. Before you buy—phone, write or wire HOWE!

HOWE

Member FAM (Fire Apparatus Manufacturers Association)

HOWE

"dependable fire apparatus since 1872"

FIRE APPARATUS COMPANY

Dept. FM95, 1400 W. 22nd St., Anderson, Ind., U. S. A.

first need for efficient fire fighting... M·S·A CHEMOX breathing protection

Because effective fire fighting calls for close range operations, M·S·A Chemox breathing protection is essential for every department.

The M·S·A Chemox is on and operating in seconds . . . the instant the wearer starts to breathe, pure oxygen is released from the replaceable chemical canister. This means the Chemox-equipped firemen can work surrounded by unbreathable or oxygen deficient atmospheres with complete breathing safety . . . the fighting team can get to the seat of the fire in the fastest possible time . . . operate at 100% efficiency in quick attacks at the seat of the fire, or rescue work.

The M·S·A Chemox is light—only 13½ pounds. Its balanced design gives maximum comfort, freedom of movement. The economical replaceable chemical canisters can be stored indefinitely—always ready. And because the Chemox does not depend on high pressure cylinder valves and fittings which may leak, and because no extra equipment is needed for recharging, you have a fire-fighting device that gives you positive, effective service. Write or call for complete details. Your request will be handled promptly.

MSA

SAFETY EQUIPMENT HEADQUARTERS

Call the M·S·A man on your every safety problem . . . his job is to help you

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201 North Braddock Avenue, Pittsburgh 8, Pa.

At Your Service: 76 Branch Offices in the United States

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from coast to coast . . .

MACK B Model

. . . the best built . . .

Princeton Junction, New Jersey—Mack Type B-505 six wheeler. 500 gpm triple combination pumper. 1500 gal. booster tank. 3-man coupe cab.

Mack Type B-85, 750 gpm triple combination pumper. 5-man sedan cab.

Mack Type B-85, 75' four-wheel aerial. Fully compartmented.

Mack Type B-85 tractor drawn 85' aerial with compact design for easy handling in heavy traffic.

MACK MANUFACTURING CORPORATION

proved in service

Fire Apparatus

the best performers

Arcade Fire District, Sacramento, California—Mack Type B-95, 1000 gpm triple combination pumper. 4-stage high-pressure pump. 500 gal. booster tank, special side-mounted reels in compartments.

THROUGHOUT THE NATION, fire departments now have the new B Model Mack Fire Apparatus in service. The word's getting around fast—these are the greatest Macks ever built!

MOST MODERN IN THE FIELD, B Model Macks incorporate all the experience gained in nearly 50 years of leadership in equipping the fire-fighting services.

FAMOUS FOR DEPENDABILITY, their Mack-built chassis have been completely redesigned for even greater strength . . . for stand-out performance and safest handling qualities.

HANDSOMELY STYLED, the new B Model lines are completely functional—providing unmatched visibility, personnel protection, and ease of maintenance—with no departure from familiar, conventional design.

PACKED WITH POWER, their king-sized, overhead-valve Mack Thermodyne® engines provide more *useful* fire-fighting power . . . performance-*plus* that you can always count on.

AND STILL OUTSTANDING FOR QUALITY! Mack maintains highest quality control by designing and making many more components than any other fire apparatus manufacturer.

WHATEVER YOUR NEEDS . . . six or four wheel aerials, pumpers, squad cars or combination ladder trucks—you'll find a Mack can best fill the bill. Be sure to call in your Mack representative for full details.

Empire State Building, New York 1, N. Y.

Mack
FIRE APPARATUS

3276

When life depends on split-second efficiency

Fine points of design and construction may be a matter of pride or profit in some vehicles — but in a rescue car they can mean life or death.

In a Gerstenslager Rescue Car you determine the equipment needed to meet your safety department's probable emergencies.

Gerstenslager designs the body to carry that equipment with maximum protection and accessibility.

Gerstenslager workmanship assures the all-important quality and precision. Fittings and fastenings hold delicate apparatus in position and release it instantly when needed. Compartment doors don't stick or warp. Bodies are built to stand rough travel at high speeds.

A Gerstenslager Rescue Car is the last word in modern life-saving efficiency when the chips are down.

THE GERSTENSLAGER COMPANY
WOOSTER, OHIO

Established 1860

Gerstenslager RESCUE CARS

Firemen

Volume 22 — Number 9

WARREN Y. KIMBALL — EDITOR
PAUL R. LYONS — ASSOCIATE EDITOR
HENRY S. GERE — ADVERTISING MANAGER

Published monthly for the fire service members of the
NATIONAL FIRE PROTECTION ASSOCIATION

A VOLUNTARY NON-PROFIT ORGANIZATION
60 BATTERYMARCH ST., BOSTON 10, MASS.

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Cover Picture

"Millions of kids love Sparky for himself . . . but folks should not lose sight of the important fire safety rules that Sparky stands for." So says one of the new advertisements, prepared by The Advertising Council for the nationwide Sparky fire prevention campaign. Mats of these ads are furnished free of charge to anyone who writes to The Advertising Council, 25 West 45th Street, New York City 36, New York. A proof sheet showing the full selection of new ads went to all newspapers on September 1, and to NFPA members with the September issue of *Fire News*.

This month's cover shows the picture which will be featured in this campaign. The Sparky doll will appear on the market later this year, and is being made by Gund Manufacturing Company, world's largest doll manufacturer.

The Fire Service 1955

There can be little question that, throughout the land, fire fighters are recognized as friends ever ready to help in time of emergency. This is the result of public awareness, growing over many years, of the ever increasing competancy and efficiency of the average fire department's organization, and respect for the training and skill of the individual fire fighter. For example, fire fighters in hundreds of communities in the northeastern states were on the job rescuing persons and property from the flood disaster last month.

There are many other factors contributing to this increasing appreciation of the fire service. One of the greatest has been the campaign to take personal fire safety messages to each home through home inspections and public school programs. A generation is growing up realizing that the fireman is not just a paid or volunteer public servant, but a friend.

The American home fire safety program is unique in that it is not a police effort of compulsion but a job of friendly salesmanship. Fire service organizations are using modern public relations methods and media to "sell" the safety service that they render, and to acquaint the public with the multitude of skills and specialized training necessary for the continuous program to protect communities against fire and disaster.

The combined skills and engineering talent of fire departments, the NFPA, IAFC, NBFU, the apparatus industry, and other fire service organizations are joined in developing further improvements and refinements that should enable fire fighters to do better jobs. Nevertheless, fire departments are only incidentally concerned with the shining apparatus which are their tools of trade. The most important ingredient in any fire department is the skilled manpower devoted to the ideal of public service.

It is traditional that the fire service is never complacent. It is ever seeking improvement. Fire fighters generally are willing to give the new idea or equipment a fair try and try to make it work or at least see where improvement can be made. Constant attention is being given to higher standards in recruitment and training of personnel. Fire department administration is recognized as "big business." Several metropolitan colleges are now offering courses for fire officers. (See page 48.)

Admittedly there is much progress to be made, but in 1955 as never before, the fire service has the organization, experience and progressive attitude conducive to great progress in the public interest.

Fire remains a scourge to the North American Continent but we have the men and equipment to meet the problem. FIREMEN magazine feels privileged to continue to chronicle for you the progress of this great public service agency — the American Fire Service.

WARREN Y. KIMBALL, *Editor.*

During the 82nd IAFC Conference Omaha's Fire Department crack drill team will make two appearances. It will demonstrate precision marching during the Convention Memorial Service on Monday morning and the annual banquet-dance entertainment program at the Civic Auditorium on Wednesday night. At right is the color guard of the drill team.

things to see with the IAFC in OMAHA, NEBRASKA

CHIEF Eugene W. Fields of the Omaha, Nebraska, Fire Department will be host to the 82nd annual conference of the International Association of Fire Chiefs, September 19–22. Headquarters for this colorful fire service assembly will be the Hotel Fontanelle, while exhibits and other activities will be in the nearby Omaha Civic Auditorium.

Many fire chiefs and other fire service members will want to make a personal tour of the modern facilities of the Omaha Fire Department, some of which are illustrated in this story.

Chief Eugene W. Fields of the Omaha, Nebraska, Fire Department, host to the 82nd Annual Conference of the International Association of Fire Chiefs.

Headquarters for the Department is Fire Station No. 3, at 19th and Harney Streets, just five blocks south of the Civic Auditorium where the Conference exhibits will be displayed. This fire station houses Engine Company No. 3, Hook and Ladder Company No. 8, Rescue Squad No. 1, and the cars of Chief Fields and an Assistant Chief. The Chief's administrative office, and the Arson and Inspection Divisions are also in this building. Of particular interest are the rescue squads of the Department which have equipment valued at more than $75,000 and which have received citations for various rescue activities. (See FIREMEN for September, 1953.) A new fire alarm headquarters has recently been completed. It is located next to Fire Station No. 8 at 40th and Nicholas Streets, in the center of the City and features a completely new alarm and communication system with "selective" dispatching which may be in operation when the Conference opens. Other buildings of interest are shown in photos on these pages.

The Department has an interesting history which dates back to 1860, the year before the beginning of the Civil War. Eight charter members met in the City and organized "The Pioneer Hook and Ladder Company," for which a charter was granted by the State Legislature in 1861. One of the members, A. J. Simpson, was the first fire chief and he also built the Department's first ladder truck in his carriage factory. At that time the only fire station was located on 12th Street between Farnum and Douglas Streets. The bell hanging in the tower of the Kountze Memorial Church, not far from this section, was used as a fire alarm in the early days of bucket brigades and hand-towed fire apparatus.

The first hand engine, named "Fire King," was purchased in 1866 and a year later the first steam engine was obtained and named "The Omaha." Two years later the second steamer replaced the hand engine, followed by the acquisition of a third steamer, "The Nebraska," in 1870. Purchase of this new apparatus resulted in the formation of Omaha's part-paid fire department, which included engineers, stokers and drivers, and which was the parent organization of today's Department.

As in the history of many fire departments, the passing years brought many accomplishments and many tragedies. As reported by Chief

Fields, some 40 officers and fire fighters lost their lives during fires battled by the Department through the years.

During the destruction of the Grand Central Hotel in 1878, four fire fighters of one company fell from the third floor into the hotel and lost their lives. In 1891 in the "Paxton Annex" hotel fire a fire captain was killed and three fire fighters seriously injured when the west wall of the hotel collapsed during the fire fighting. In 1893 "The Shiverick" fire again meant disaster, for two fire fighters were killed and three others seriously injured during the collapse of the building. Another tragedy for the Department was the "Farnum Theatre" fire in 1893, which resulted in the death of one fire fighter and the injury of four others.

In 1899 four firemen lost their lives at the Howard Street Plant fire of the Mercer Chemical Company when an aerial ladder leaned against high voltage electric wires. Four firemen were electrocuted and several others badly shocked while attempting rescue. Four years later another building collapse took the lives of four fire fighters when a grocery store was destroyed.

The Continental Block Fire in 1917 was considered one of the most dangerous fires in the City's history. This occurred in the business block between 14th and 15th Streets on Douglas, while the temperature was 14 degrees below zero. A conflagration was averted but loss amounted to over $400,000.

The largest and, perhaps, most spectacular fire in the history of the Omaha Fire Department destroyed the meat processing firm, Armour & Company, on February 14, 1923. Starting in the hog-cutting department, the fire spread through the entire building and lasted for four days of sub-zero weather. Some 20 fire fighters were injured and the loss exceeded $1,750,000.

Considered the most tragic fire in the history of the Department was the Millard Hotel catastrophe of February 8, 1923, in which the lives of seven firemen were lost.

The Omaha Fire Department claims to be the first in the United States to originate and adopt the "two-platoon system." This system was established in July of 1907 by the Nebraska State Legislature. Omaha is also credited with being one of the first cities to organize and operate rescue squad and first aid units in June, 1936, and one of the first to install loud speakers in all fire stations. (This communications system is now being remodeled to include selective radio dispatching.)

No. 10 Fire Station is located at 50th and Pine Streets and houses one engine company and a "quad unit," as well as a complete kitchen and dormitory facilities. Cobblestones from the City streets were used for the construction of this building.

At the present time there are 366 men in the Omaha Fire Department, divided into two shifts, or platoons, each working "24 hours on and 24 hours off." Two "State Days" are granted each month, and each fireman also earns 1½ days of sick leave each month, as well as 1½ days per month towards an annual furlough of 18 days. Not more than 36 furlough days are allowed to collect for any member of the department. The Department has 31 fire companies, including 19 engines, 9 hook and ladder companies, and 3 rescue squads. At the present time these companies protect an area of 42½ square miles, which includes a population of more than 250,000.

Chief Fields reports that if the steady growth of recent years continues, City limits may soon be extended to encompass additional populated areas; thus creating the need for additional men and apparatus, as well as additional fire stations.

Maintenance of apparatus is handled by the Mechanical Division which is capable of handling 90 percent of the repairs of apparatus. The Maintenance Shop is quartered in the building at 22nd and Ames Avenue. This is a 1-story brick structure which houses Engine Company No. 15 and Hook and Ladder Company No. 5, both commanded by the Second District Battalion

***(Left)* Station No. 24 at 30th and Hanover Streets in North Omaha houses an engine company and dormitory quarters on the first floor. The second floor is used for the Fire Department drill school, and contains an office for the chief instructor and drill master.**

Chief. All maintenance in the Department is supervised by Chief Master Mechanic Albert Giddings.

Oldest member of the Omaha Fire Department and also possessor of the most service years is First Assistant Chief Michael J. O'Laughlin who is 72 years old and who has been a member of the Department since July 16, 1909. The Department is also proud of the 2,400 boys and girls of Omaha who have enrolled as members of the very active Junior Fire Patrol.

Fire Department maintenance shop at 22nd and Ames Avenue.

Some of the Scheduled Program Items of the 82nd IAFC Conference

Sunday, September 18.

9:00 A.M. Registration and Advance Registration — Omaha Civic Auditorium — Assembly Hall.
1:30 P.M. Open House at Exhibit Hall.
5:30 P.M. Get Acquainted Dinner.

Monday, September 19.

9:30 A.M. Opening Session — Omaha Civic Auditorium — Chief C. Gray Burnett, presiding, President, International Association of Fire Chiefs.
Introduction of Host Chief — Chief Eugene W. Fields, Omaha Fire Department.
Address of Welcome — Honorable John Rosenblatt, Mayor of Omaha.
Response to Address of Welcome — Chief William Fitzgerald, First Vice President, International Association of Fire Chiefs.
President's Annual Address — Chief Burnett.
"A Word of Thank You" — Mrs. Lou Gehrig, Muscular Dystrophy Associations.

10:45 A.M. Memorial Production — World famous Boys' Town A Capella Choir.

2:00 P.M. "Civil Defense 1955 — The Role of the Fire Service" — Governor Val Peterson, Federal Civil Defense Administrator.

2:45 P.M. "The Architects Look at the Fire Problem — And Do Something About It" — John D. Thornton, Chairman, Committee of Human Safety, American Institute of Architects.

3:30 P.M. "Fire Service Approach to Public Relations" — Chief Forrest B. Lucas, Dayton, Ohio.

4:00 P.M. "The British Viewpoint of the H-Bomb" — George Stanbury, Scientific Advisers Branch, British Home Office, London, England.

9:00 P.M. Fire Department Dance and Stage Show.

Tuesday, September 20.

10:00 A.M. Technical sessions open — Music Hall.
Panel — "What Home Inspection Means to the Fire Service" — Moderator, Chief Jay W. Stevens.

11:00 A.M. "Serving the Fire Chief" — Warren Y. Kimball, Manager, Fire Services Department, National Fire Protection Association.

11:45 A.M. "Modernizing a Fire Department" — Chief Lewis A. Marshall, Providence, Rhode Island.

2:30 P.M. Field Demonstration — Site to be announced.
Tour of Fire Department Training School.

Wednesday, September 21.

10:00 A.M. Technical sessions open — Music Hall.
Panel — "Is the Fire Service Prepared for War?" Moderator, Chief William Fitzgerald.

11:00 A.M. "Oil Stoves Don't Have to be Killers" — Miles E. Woodworth, Flammable Liquids Engineer, National Fire Protection Association.

11:00 A.M. For the Ladies: Tour of Boys Town.

2:00 P.M. Technical sessions open — Music Hall.
"Tomorrow's Firemen Today" — George K. Myers, Director, Civil Relationships Services, Boy Scouts of America, National Council. Minneapolis Boy Scout Unit. Introduction by Chief R. C. Malmquist.

7:00 P.M. Annual Banquet — Omaha Civic Auditorium.

Thursday, September 22.

10:00 A.M. Installation of Officers.
12:00 Noon Final Adjournment.

(*Below*) Members of the Omaha Fire Department Rescue Squads with five of their vehicles, including three rescue trucks, utility truck, and ambulance.

for fire departments everywhere . . .

ONE means to success is to know where to find the information you need.

Top fire service leaders appreciate this axiom. Some of the poise of leadership stems from knowing the right persons to talk to, the right organizations to write to, when a tough problem needs quick solving.

And today's progressive fire departments also recognize this axiom. The younger officers . . . the "chiefs-to-be" . . . not only have quick, correct answers to many fundamental fire fighting and fire protection problems, they also are acquiring a supply of reference publications in their fire stations, or homes, to provide answers for the more complex problems.

There is a definite trend, among fire departments which have NFPA membership, for developing substantial reference libraries. One indication of this is the steady increase in circulation of FIREMEN magazine, (almost 30,000 per month) to NFPA member fire departments and their fire fighters. There is also a growing demand for the NFPA Handbook of Fire Protection ($10.50) with the second 10,000-copy printing of the 11th edition now being distributed.

Of particular use to fire departments are the National Fire Codes, containing all of the latest standards of NFPA published each year in a 6-volume set. Through a special distribution plan, NFPA member fire departments may obtain any one volume of this set free, and purchase the other volumes at a substantial savings. For example, an NFPA member fire department can obtain the entire set of the Codes for only $20, while those who are not members of the Association pay $30. (See box.)

Fire fighters taking promotional examinations have a special interest in the NFPA *Quarterly*, with its detailed fire analyses and technical articles on fire protection and control. The large loss fire analyses, published each year, are also used throughout the nation as a source of reference for fire chiefs, fire marshals, industries and insurance organizations. Also sent to NFPA members each month is *Fire News* which reports significant fires, activities and new publications of interest to the fire service, and meetings and actions of the Association.

There has been a very strong demand, from fire departments, for the "Fire Station Library," ($9.75) a 4-volume set bound in an attractive hard casing. This includes "Attacking and Extinguishing Interior Fires" and "Fire Fighting Tactics," both by Chief Lloyd Layman; "Operating Fire Department Pumpers," and "Handling Hose and Ladders," a pictorial training manual.

Through these, and many other publications, the NFPA provides for its fire department members a continual up-to-date flow of information on a wide variety of topics particularly important to the fire service. Industrial and airport fire brigades also make good use of the special publications describing particular hazardous processes or significant fire experiences. (See pages 33 and 45.)

If you, the reader, belong to a fire department or fire brigade which does not have membership in the National Fire Protection Association, take a poll of your fire department and suggest that an up-to-date fire station library be developed. For a beginning, the library could contain the NFPA Handbook, the "Fire Station Library" and perhaps a few of the volumes of the National Fire Codes.

To obtain FIREMEN, the NFPA *Quarterly* and *Fire News*, your fire department must join the NFPA and pay the annual $12.50 membership dues. If yours is a municipal paid, call or volunteer fire department, it will be entitled to receive six (6) subscriptions to FIREMEN at no extra charge, with additional annual subscriptions costing only $12.50 per year.

If you belong to an industrial or airport fire brigade, or to a fire brigade serving any Government installation, then each and every subscription to FIREMEN costs $1.25 per year, in addition to membership dues.

To start that membership, or to get further information, take a pen, now, fill out this blank and mail it to the NFPA today. You'll find that NFPA membership is an investment which will bring to your fire department a valuable, continual supply of new information, which can improve the knowledge and ability of every fire fighter, and help your fire department to strengthen its leadership in raising the standard of fire safety in the community or industry, which it serves.

National Fire Protection Association
60 Batterymarch Street, Boston 10, Massachusetts

Gentlemen:

☐ Please send me an application blank for NFPA Fire Department membership for a (municipal) (industrial) fire department.

☐ Please send me information on the National Fire Codes.

☐ Please send me a list of NFPA publications (free).

Name .....

Address .....

City ..... **State** .....

Summary—Fog Nozzle Studies

By Warren Y. Kimball, Manager, NFPA Fire Services Department and Editor of *Firemen*

AS REPORTED in FIREMEN for October and December, 1954, the University of Maryland last year conducted studies of fire department fog nozzles in cooperation with the Federal Civil Defense Administration and the Forest Service of the U. S. Department of Agriculture. A subcommittee of the NFPA-IAFC Committee on Fire Department Equipment, headed by Director Robert C. Byrus of Maryland's Fire Service Extension Department, served as an advisory group in planning the studies, which were designed to bring up-to-date previous research conducted by the Committee at Elmira and published by NFPA in 1953. The University has now made available to the NFPA and other cooperating agencies the results of these studies.

This data is included in a 33-page report outlining the test techniques and including tabulation of test results. The summary report is supplemented by some 22 volumes of data on the specific nozzles tested. These volumes include the photographs of the stream patterns taken against a standard background (see illustrations), diffusion patterns for each nozzle, figures indicating flows at various pressures and the nozzle reactions caused by the various streams. This data has been summarized by the NFPA Fire Service Department and is presented here for use by fire officials and fire department personnel interested in performance of particular nozzles.

In addition to this tabulation of information regarding many fire department fog nozzles now in use, these studies have already served to encourage participating manufacturers to develop new and improved models to give the fire service performance compatible with recommendations in the Research Report.

Following the previous tests quite a number of fog nozzles were found to provide flows which were not entirely consistent with the size of fire hose with which they were made to be used; thus providing helpful information to the fire service.

For the convenience of our readers, we are including certain data covering nozzles tested in 1952, since some of these nozzles were not included in the study made during May 1954–55.

In accordance with suggestions of the Advisory Committee, each fog nozzle was tested at four different nozzles pressures: 75, 100, 125 and 150 lbs. Where the nozzles were of the adjustable type the flows also were recorded at 30, 60 and 90 degrees and at straight stream settings. Where the nozzles were non-adjustable, the flows could only be measured at the fixed pattern. In addition to the flow at each pressure, the reaction occasioned by each stream was also measured to indicate the amount of work required of fire fighters to hold the nozzle in position. These reaction figures are given in the tables. It is interesting to note that the reactions very closely follow the commonly used formula for nozzle reactions $R = 1.5\ P\ D^2$, published in NFPA Handbook of Fire Protection, where R = reaction in pounds; P = nozzle pressure, in pounds per square inch (psi); and D = diameter of nozzle tip in inches. It was also observed that where a fog stream was set for a wide angle discharge, the reaction was generally somewhat less than when the stream was adjusted to a narrower fog cone, providing a more direct back thrust.

Director Robert C. Byrus, University of Maryland, Fire Service Extension, Chairman of the NFPA-IAFC Fire Department Equipment Subcommittee on Fog Nozzle Studies shows Professor of Journalism Al Danegger some of the equipment used to photograph and measure water fog patterns.

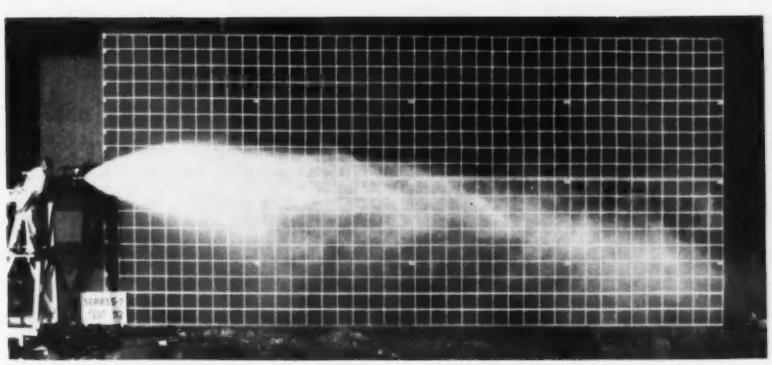
AS explained in the December, 1954, issue of FIREMEN, fog pattern studies were made by discharging streams inside a building against a series of glass tube receptacle spaced one foot between centers (see illustration). Large nozzles were discharged at 12 ft. from the receptacles and the small nozzles at a distance of 6 ft. Obviously, fog patterns are affected by the nozzle setting, so for adjustable nozzles a 30-degree pattern at 100 lbs. NP was used. Readers studying the patterns included with this report should realize that patterns of adjustable nozzles may be changed to give different performances by varying nozzle pressure and the distance of trajectory.

We have circled (pages 24-27) the figures representing more than 50 percent of the highest flow discharging at any point on the pattern. This seems to give a reliable visual indication of the areas of greatest droplet concentration. The figures given on the nozzle patterns represent measurement of the water column in each receptacle graduated at 1/12th of an inch; thus a figure "12" represents 1 inch of water column accumulating in a given receptacle during the time the particular nozzle was discharged.

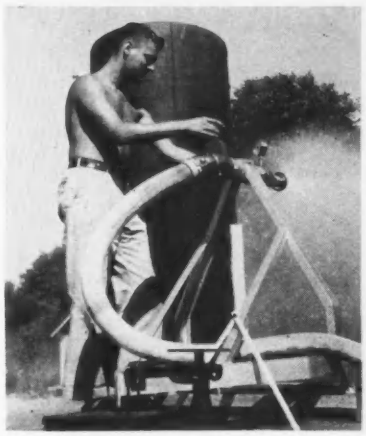
Fog Nozzle Flows and Nozzle Reaction and Stated Pressures and Stream Patterns

Series 1 - American-LaFrance Corp.	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
NOZZLES FOR 1-INCH HOSE						
2E, Alfco, adjustable	(1–1)	30°	**23** (10)	**25** (13)	**29** (16)	**32** (19)
		60°	**20** (9)	**22** (12)	**24** (15)	**25** (19)
		90°	**28** (7)	**34** (9)	**40** (11)	**45** (14)
		SS	**20** (10)	**21** (11)	**24** (15)	**28** (19)
NOZZLES FOR 1½-INCH HOSE						
4E, Alfco, adjustable	(1–2)	30°	**62** (23)	**70** (31)	**78** (39)	**86** (47)
		60°	**67** (23)	**75** (28)	**86** (35)	**95** (43)
		90°	**73** (20)	**84** (26)	**88** (32)	**96** (39)
		SS	**58** (22)	**65** (30)	**75** (35)	**83** (44)
10E, Alfco, adjustable (Adapter connection required for test)	(1–3)	30°	**99** (36)	**110** (40)	**125** (57)	**134** (67)
		60°	**107** (40)	**134** (53)	**137** (68)	**150** (80)
		90°	**110** (37)	**140** (49)	**142** (58)	**147** (66)
		SS	**64** (25)	**71** (34)	**78** (41)	**87** (50)
Poweron, Model P-4A, no shutoff (75 & 125 lb. figures interpolated)	(Hb)	60°	**55**	**65**	**75**	**85**
NOZZLES FOR 2½-INCH HOSE						
10E, Alfco, adjustable	(1–4)	30°	**94** (29)	**115** (37)	**122** (46)	**125** (56)
		60°	**100** (31)	**118** (41)	**133** (51)	**154** (61)
		90°	**113** (24)	**119** (35)	**142** (44)	**170** (52)
		SS	**80** (32)	**93** (43)	**104** (55)	**113** (66)
Poweron, Model P-10A, no shutoff (75 & 125 lb. figures interpolated)	(Hb)	60°	**143**	**165**	**185**	**205**
Series 2 - Wooster Brass Div., Fyr-Fyter Co. Note: Nozzles not received in time for test at Maryland. This data from NFPA Handbook of Fire Protection.						
NOZZLES FOR 1-INCH HOSE						
Quad-Way Fog Gun, NQ-L1 with ¼-in. solid stream (75 & 125 lb. figures interpolated)	(Hb) (2-1)	30° 60° 90° SS	**10** **11** **13** **15**	**12** **13** **15** **18**	**13** **14** **17** **20**	**14** **17** **19** **22**
Quad-Way All Purpose, NQW-100 with ¼-in. solid stream (75 & 125 lb. figures interpolated)	(Hb)	30° 60° 90° SS	**15** **17** **16** **15**	**18** **20** **19** **18**	**20** **22** **21** **20**	**21** **24** **23** **22**
NOZZLES FOR 1½-INCH HOSE						
Quad-Way All Purpose NQW-150, adjustable with ½-in. solid stream which can be used simultaneously with spray (75 & 125 lb. figures interpolated)	(Hb)	30° 60° 90° SS	**60** **73** **61** **63**	**70** **85** **71** **73**	**78** **90** **79** **82**	**79** **95** **82** **91**

*Where no test key is given symbol "Hb" indicates data from NFPA handbook.



A fog nozzle discharge shown against measured backdrop. Photographs of all nozzle patterns tested were taken at dusk when the air was still. Equal illumination was obtained for each study and identical development and printing processes were used for all pictures which comprise some 22 volumes in the complete report.



Reaction of nozzles published in the accompanying tables (figures in parentheses) was measured on this scale device. As water causes thrust on nozzle, reaction is carried through V-joined arms below which press needle point on scale. Nozzle pressure was regulated by gate valves and angle of discharge pattern established by special calipers, measuring from point of emergence to 6 inches in front of nozzle. The net weight of this assembly was considered in thrust calculations.

In order to study the nozzle pattern accurately under uniform conditions, photographs were taken at each pressure and nozzle adjustment. The photos were taken at night under a powerful stroboscopic light to provide uniform lighting conditions. The pictures were made at 1/10,000 of a second so that the individual water drops or particles can be studied in the original photos. While it is not possible in this report to reproduce these hundreds of pictures, the performance data of a particular nozzle will be available to manufacturers and others concerned.

Incidentally, some measure of judgment had to be used in selecting the 30, 60 and 90 degree patterns for adjustable fog nozzles. To eliminate errors of judgment and to make the tests as uniform as possible, the angle was measured at 6 inches from the point of emergence of the stream. Hence, some of the streams might appear somewhat different from what an individual fire fighter could visualize as a 30 or 60 degree fog, if he based his judgment on some other point along the stream. Note that some nozzles give an increase in discharge if the angle of fog pattern is increased while a few tend to reduce the flow with a wider angle of discharge.

This tank was used for supply during nozzle reaction studies. Instructor John Bryan is examining calibrated sight gage. Sight gage was marked at 5-gallon intervals, thus the amount of water discharged by each nozzle during a given time could be observed.

THERE are many interesting observations and conclusions that might be drawn from these studies. Such information should be included in the training programs of fire departments using any of these fog nozzles. For example, the report comments upon such matters as droplet size, air entrainment, susceptibility to clogging, operating pressures and nozzle controls. It suggests that further studies would be desirable in some of these fields. The following recommendations are included in the conclusion of the report:

(*a*) A comprehensive research should be undertaken as soon as possible to evaluate relative extinguishing effectiveness of water. Unless there is such factual data, based on fire ground conditions, there can be no determination of the optimum rate of water application, specifications for booster tank size, establishment of criteria for hose line sizes, specification of the number of points of attack for a given situation, the angle of discharge pattern giving greatest results, and other similar factors.

(*b*) The characteristics of the diffusion patterns of fog nozzles over an entire range of operating conditions should be made and evaluated. Of necessity this must be on a comprehensive scale.

(*c*) Detailed study and an analysis of the amount of air entrainment and turbuance created by a discharging fog nozzle

Series 2 (Concluded)	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
TFF-2	(Hb)	90°	**15**	**17**	**19**	–
TFF-2A		90°	**21**	**25**	**28**	–
TFF-2B (75 & 125 lb. figures interpolated) Note: These nozzles may be set at factory for any discharge angle, 0° to 180°. Discharge shown for one setting		90°	**34**	**40**	**45**	–
NOZZLES FOR 2½-INCH HOSE						
Quad-Way All Purpose NQW-250, adjustable with either ¾, ⅞, or 1-in. SS stream which can be used simultaneously with spray with additional pump discharge and pressure (75 & 125 lb. figures interpolated)		30°	**77**	**90**	**95**	**99**
		60°	**91**	**105**	**110**	**115**
		90° SS	**79** (Depends	**91** on orifice	**97** selected)	**102**
Series 3 - Grinnell Co.						
NOZZLES FOR 1-INCH HOSE						
Flame Buster, combination nozzle with ¼-in. solid stream. Applicators with 160° pattern	(3–1)	60°	**14**	**16**	**17**	**18**
		SS	**15**	**16**	**18**	**20**
Grinnell Spray Pipe, Model B, ¾-in. (75 & 125 lb. figures interpolated)	(Hb)	90°	**12**	**14**	**15**	**15**
NOZZLES FOR 1½-INCH HOSE						
Flame Buster, combination nozzle with ½-in. solid stream. Applicators available with 160° pattern	(3–2)	60°	**34** (12)	**40** (15)	**44** (20)	**47** (23)
		SS	**59**	**68**	**78**	**84**
Grinnell Spray Pipe, Model C (75 & 125 lb. figures interpolated)	(Hb)	60°	**49**	**57**	**64**	**70**
Grinnell Spray Pipe, Model B (75 & 125 lb. figures interpolated)	(Hb)	60°	**59**	**69**	**77**	**85**
NOZZLES FOR 2½-INCH HOSE						
Flame Buster, combination nozzle with ¾-in. solid stream. Applicators available with 160° pattern	(3–3)	60°	**69** (19)	**79** (26)	**111**	**117**
		SS	**130** (54)	**152** (75)	**168** (90)	**184** (110)
Grinnell Spray Pipe, Model B (75 & 125 lb. figures interpolated)	(Hb)	60°	**100**	**116**	**129**	**142**

*Where no test key is given symbol "Hb" indicates data from NFPA handbook.

This tank truck was used as a source of water supply in testing large flow nozzles. Sight gage at left end was calibrated in 5-gallon intervals. Stop watch was used to time duration of flow through nozzles, thus amount of level drop in sight gage permitted calculation of gpm flow.

Other water fog pattern studies were made inside a building to avoid wind conditions with this series of glass tube receptacles. Doorway measured 10 x 12 feet and tubes were placed with 1-ft. between centers. Note hollow cone effect of nozzle being studied.

should be made, and its significance should be evaluated.

(*d*) Nozzle manufacturers should standardize on the characteristics of each model number they designate. Any variation of consequence therefrom should have another model designation. They should rate their nozzles under standard operating conditions.

(*e*) Personal experience of firemen indicates that skill and proficiency in the techniques of using a fog nozzle may be of greater importance than the inherent design of the nozzle itself. Every potential user of a fog nozzle should be given schooling in the techniques of operation, and provided an opportunity to gain fire control experience in training sessions.

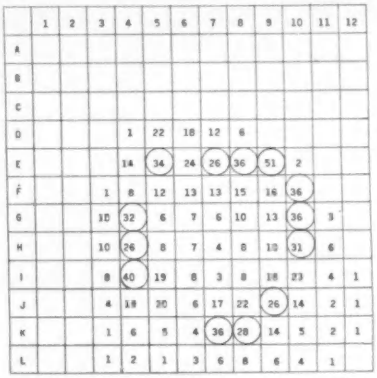
One additional suggestion resulting from these studies is that each fire department should stamp or mark the flow obtained by its various fog nozzles while operating the standard nozzle pressure (usually 100 lbs.) when the nozzle is set for its normal pattern. If this is done friction losses and required pump pressures can be readily calculated and flows at other pressures can be quickly determined by the fact that the square root of nozzle pressure multiplied by 10 indicates the percentage of the known flow at 100 lbs.

In several instances we have included listings of models announced by manufacturers that have not been tested by the University or the advisory Committee. These are designated by the key (Mfgr).

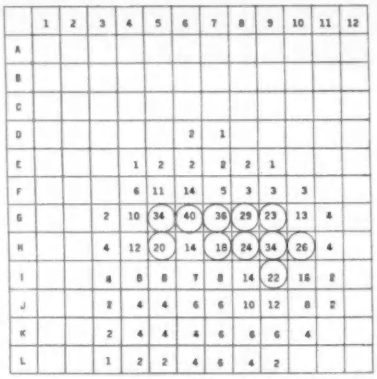
(*Other tables on pages 56-60*)

	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
Series 4 - Elkhart Brass Mfg. Co.						
NOZZLES FOR 1-INCH HOSE						
Elkhart Mystery, S-200, adjustable	(4–1)	30°	**18** (8)	**22** (11)	**24** (14)	**27** (17)
		60°	**25** (10)	**28** (13)	**33** (17)	**37** (19)
		90°	**27** (9)	**32** (12)	**37** (15)	**40** (18)
		SS	**15** (8)	**18** (11)	**20** (13)	**23** (15)
Elkhart Select-O-Stream Mystery, S-200 adjustable Nozzle preset to SS, 30°, 90° patterns	(4–6)	30°	**20** (9)	**24** (11)	**27** (14)	**30** (17)
		90°	**27** (8)	**34** (10)	**39** (13)	**44** (16)
		SS	**16** (7)	**19** (10)	**22** (13)	**24** (16)
NOZZLES FOR 1½-INCH HOSE						
Elkhart Mystery, L-200 adjustable (Note small flow with straight stream adjustment)	(4–2)	30°	**72** (36)	**82** (41)	**89** (49)	**115** (69)
		60°	**77** (37)	**100** (44)	**109** (56)	**122** (70)
		90°	**90** (36)	**119** (43)	**133** (57)	**141** (68)
		SS	**31** (13)	**32** (17)	**37** (20)	**38** (21)
Elkhart Select-O-Stream Mystery, L-200, adjustable Nozzle preset to SS, 30° 90° patterns	(4–7)	30°	**65** (27)	**82** (36)	**85** (46)	**98** (54)
		90°	**92** (23)	**95** (31)	**115** (38)	**120** (48)
		SS	**62** (27)	**77** (35)	**78** (46)	**93** (54)
Elkhart "No-Shock," LPS-200, no shutoff	(Hb)	30°	**70**	**81**	**91**	**105**
Elkhart STL-200, S-O-S Preset 30°, 90°, SS patterns with separate shut-off valve	(Mfgr.)	30°	**106**	**125**	**140**	–
		90°	–	–	–	–
		SS	–	–	–	–
NOZZLES FOR 2½-INCH HOSE						
Elkhart Mystery, D-200 adjustable (can be supplied with 1½-in. hose thread)	(4–3)	30°	**125** (58)	**148** (78)	**168** (96)	**185** (117)
		60°	**140** (60)	**163** (77)	**180** (97)	**197** (110)
		90°	**138** (53)	**170** (73)	**192** (87)	**212** (108)
		SS	**57** (27)	**72** (37)	**87** (47)	**101** (57)
Elkhart Select-O-Stream Mystery, D-200, adjustable (Can be supplied with 1½-in. hose thread) Nozzle preset to SS, 30°, 90° patterns	(4–8)	30°	**142** (60)	**165** (80)	**188** (99)	**205** (117)
		90°	**198** (59)	**230** (80)	**260** (98)	**287**
		SS	**115** (53)	**145** (68)	**155** (84)	**170** (111)
Elkhart "No-Shock," DPS-200, no shutoff	(Hb)	30°	**135**	**156**	**175**	**200**
Elkhart Jumbo Mystery, J-200, adjustable	(4–4)	30°	**321** (**137**)	**380** (184)	**404** (225)	**445** (266)
	(Hb)	60°	**357** (143)	**404** (190)	**437** (232)	**512** (278)
		90°	**397** (199)	**454** (234)	**517** (288)	**562** (341)
		SS	**277**	**340**	**369**	**405**
Elkhard Navy Jumbo Mystery, JN-200 (75 & 125 lb. figures interpolated) This nozzle now available with larger flows.	(4–5)	30°	**600** (265)	**677** (356)	**768** (441)	**792**
	(Hb)*	60°	**624** (284)	**726** (372)	**814**	**858**
		90°	**692** (280)	*750 (367)	*842	–
Elkhart ST-200, S-O-S Preset 30°, 90°, SS patterns with separate shut-off valve	(Mfgr.)	30°	**236**	**275**	**310**	–
		90°	–	–	–	–
		SS	–	–	–	–
Series 5 - Akron Brass Mfg. Co.						
NOZZLES FOR 1-INCH HOSE						
Akr-O-Mist 1200, adjustable	(5–1)	30°	**18** (7)	**20** (10)	**23** (12)	**25** (15)
		60°	**22** (8)	**25** (11)	**28** (13)	**31** (16)
		90°	**25** (6)	**28** (9)	**32** (12)	**34** (14)
		SS	**15** (7)	**17** (9)	**18** (11)	**20** (13)
Akr-O-Jet 1201, adjustable	(5–4)	30°	**22** (12)	**26** (15)	**29** (19)	**32** (22)
		60°	**41** (17)	**45** (22)	**48** (27)	**52** (33)
		90°	**41** (13)	**50** (19)	**54** (23)	**58** (28)
		SS	**18** (8)	**21** (11)	**23** (14)	**25** (16)
Auto-Stream 1202 Adjusts for two fog positions	(5–6)	30°	**35** (13)	**41** (18)	**46** (22)	**50** (26)
		60°	**23** (3)	**24** (5)	**28** (6)	**30** (7)
		SS	**19** (8)	**23** (11)	**23** (14)	**28** (16)
P-47-A impingement, fixed[2]	(5–12)	60°	**7** (3)	**8** (4)	**9** (5)	**10** (6)
		SS	**8** (3)	**9** (5)	**10** (5)	**11** (7)
O-47-A peripheral, fixed[2]	(5–13)	60°	**12** (3)	**14** (5)	**15** (6)	**16** (7)
		SS	**8** (3)	**9** (5)	**11** (6)	**12** (7)

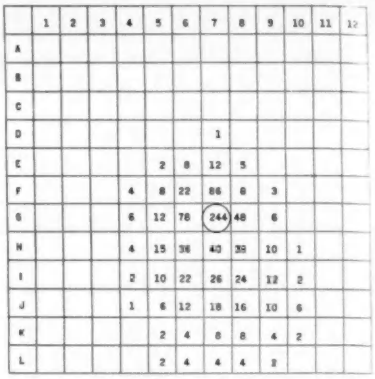
*Where no test key is given symbol "Hb" indicates data from NFPA handbook.
[2] Same as 5–13 with different heads.



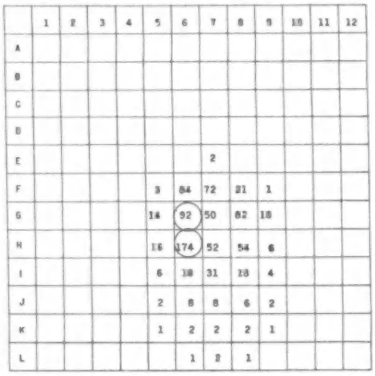
Pattern: 1-in. **American LaFrance** "2E," adjustable, set at 30° (Code 1-1)



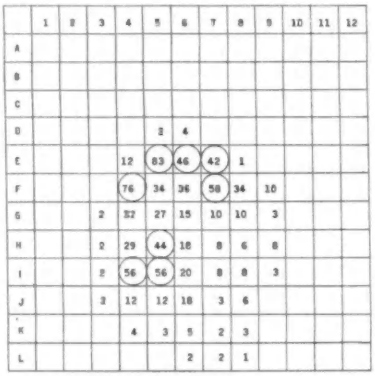
Pattern: 1-in. **Grinnell** "Flamebuster," 60° fixed impingement (Code 3-1)



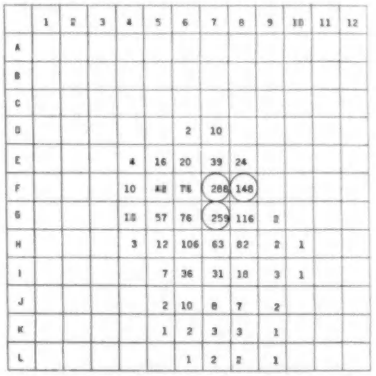
Pattern: 1-in. **Elkhart** "Mystery S-200," adjustable, set at 30° (Code 4-1)



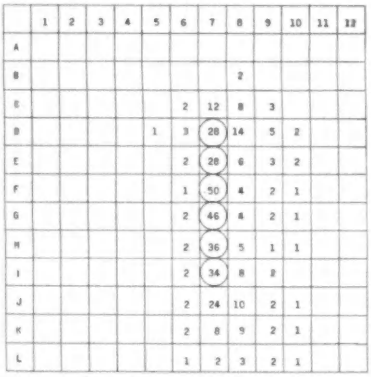
Pattern: 1-in. **Elkhart** "Select-O-Stream," preset 30° fog (Code 4-6)



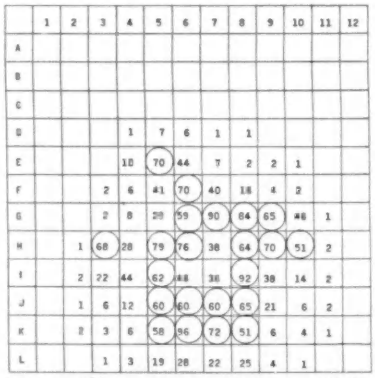
Pattern: 1-in. **Akron** "Akr-O-Mist 1200," adjustable, set at 30° (Code 5-1)



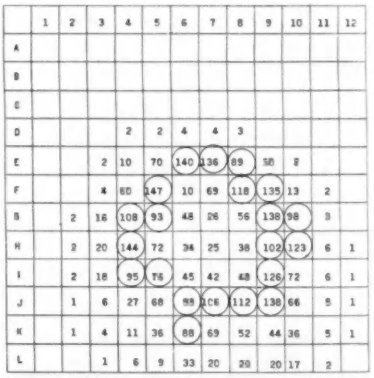
Pattern: 1-in. **Akron** "Auto-Stream 1202," adjustable, set at 30° (Code 5-6)



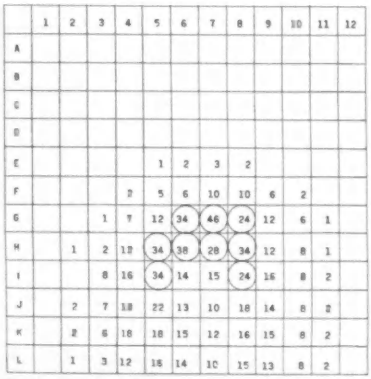
Pattern: 1-in. **Akron** "P-47-A," fixed impingement 60° (Code 5-12)



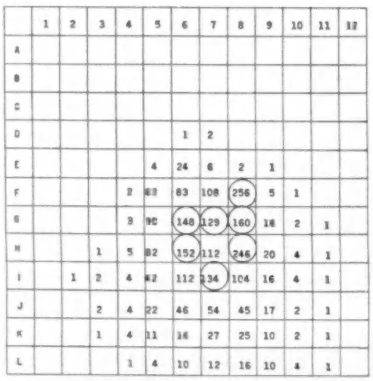
Pattern: 1½-in. **American LaFrance** "E-4," adjustable, set at 30° (Code 1-2)



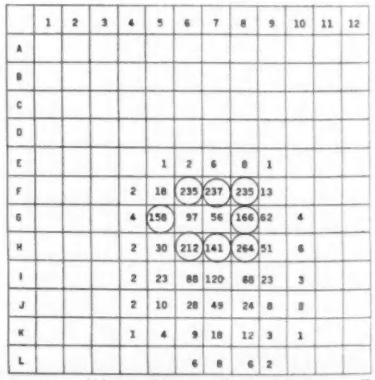
Pattern: 1½-in. **American LaFrance** "E-10," adjustable, set at 30° (Code 1-3)



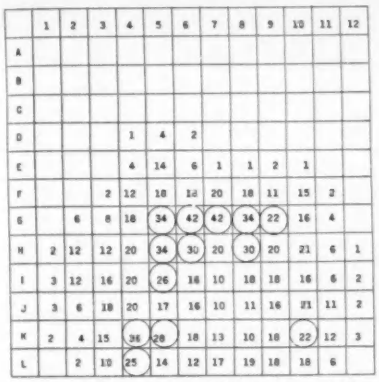
Pattern: 1½-in. **Grinnell** "Flamebuster," 60° fixed impingement (Code 3-2)



Pattern: 1½-in. **Elkhart** "Mystery L-200," adjustable, set at 30° (Code 4-2)

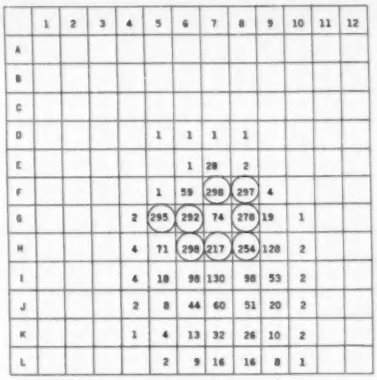


Pattern: 1½-in. **Elkhart** "Select-O-Stream," preset 30° fog (Code 4-7)



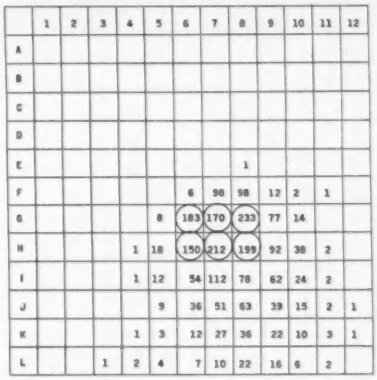
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					1	4	2					
E					4	14	6	1	1	2	1	
F				2	12	18	16	20	18	11	15	2
G			6	8	18	34	42	42	34	22	16	4
H	2	12	12	20	34	30	20	30	20	21	6	1
I	3	12	16	20	26	16	10	18	18	16	6	2
J	3	6	18	20	17	16	10	11	16	11	11	2
K	2	4	15	36	28	18	13	10	18	22	12	3
L		2	10	25	14	12	17	19	18	18	6	

Pattern: 1½-in. Akron "Akr-O-Mist 1210," adjustable, set at 30° (Code 5-2)



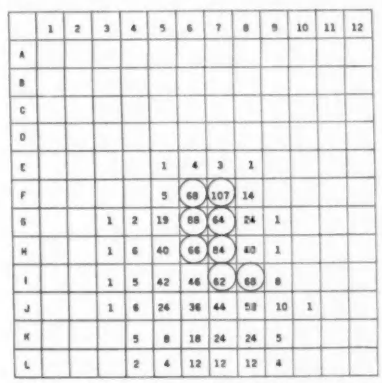
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					1	1	1	1				
E						1	28	2				
F					1	59	298	297	4			
G				2	295	292	74	278	19	1		
H				4	71	298	217	254	128	2		
I				4	18	98	130	98	53	2		
J				2	8	44	60	51	20	2		
K				1	4	13	32	26	10	2		
L					2	9	16	16	8	1		

Pattern: 1½-in. Akron "Akr-O-Jet," adjustable, set at 30° (Code 5-5)



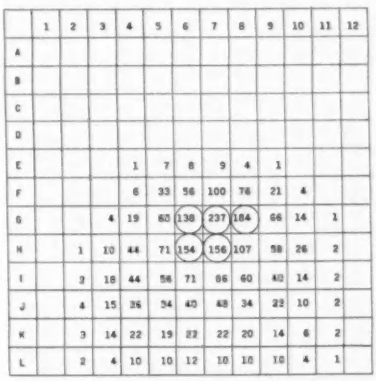
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E								1				
F							6	98	98	12	2	1
G						8	183	170	233	77	14	
H					1	18	150	212	199	92	38	2
I					1	12	54	112	78	62	24	2
J						9	36	51	63	39	15	2	1
K					1	3	12	27	36	22	10	3	1
L				1	2	4	7	10	22	16	6	2	

Pattern: 1½-in. Akron "Auto-Stream," adjustable, preset at 30° (Code 5-7)



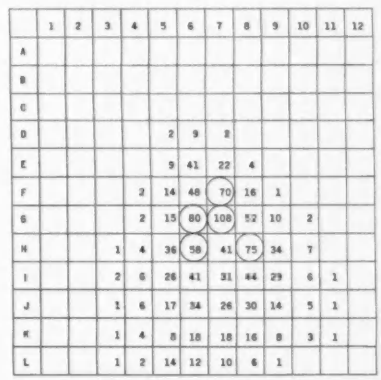
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E					1	4	3	1				
F					5	68	107	14				
G				1	2	19	88	84	24	1		
H				1	6	40	66	84	40	1		
I				1	5	42	46	82	68	8		
J				1	6	26	36	44	58	10	1	
K					5	8	18	24	24	5		
L					2	4	12	12	12	4		

Pattern: 1½-in. Akron "4-FO-Allfog," fixed 80° (Code 5-8)



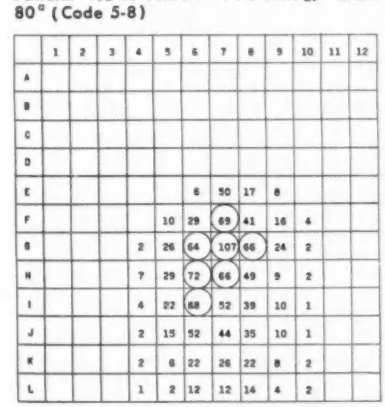
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E				1	7	8	9	4	1			
F				6	33	56	100	78	21	4		
G			4	19	63	138	237	184	66	14	1	
H		1	10	44	71	154	156	107	58	26	2	
I		2	18	44	58	71	86	60	40	14	2	
J		4	15	36	34	40	48	34	22	10	2	
K		3	14	22	19	22	22	20	14	6	2	
L		2	4	10	10	12	10	10	10	4	1	

Pattern: 1½-in. Akron "FOA-50 gpm," fixed (Code 5-10)



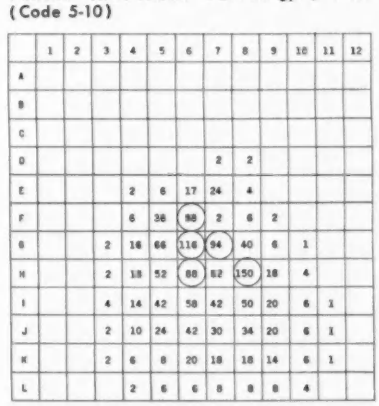
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D							2	9	2			
E							9	41	22	4		
F						2	14	48	70	16	1	
G						2	15	80	108	52	10	2
H				1	4	36	58	41	75	34	7	
I				2	6	26	41	31	44	29	6	1
J				1	6	17	34	26	30	14	5	1
K				1	4	8	18	18	16	8	3	1
L				1	2	14	12	10	6	1		

Pattern: 1½-in. Akron "4-NAP-E," fixed 60° (Code 5-16)



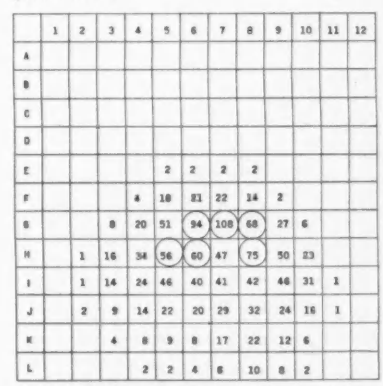
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E						6	50	17	8			
F						10	29	69	41	16	4	
G					2	26	64	107	66	24	2	
H					7	29	72	66	49	9	2	
I					4	22	68	52	39	10	1	
J					2	15	52	44	35	10	1	
K					2	6	22	26	22	8	2	
L					1	2	12	12	14	4	2	

Pattern: 1½-in. Rockwood "SG-48," fixed 60° (Code 8-2)



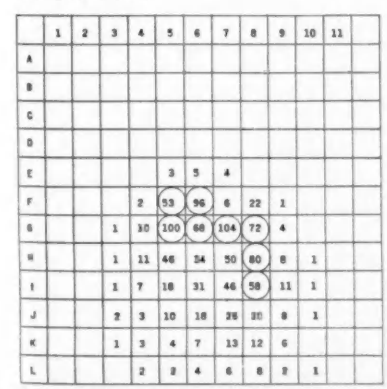
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D							2	2				
E				2	6	17	24	4				
F				6	36	88	2	6	2			
G			2	16	66	116	94	40	6	1		
H			2	18	52	88	82	150	18	4		
I			4	14	42	58	42	50	20	6	1	
J			2	10	24	42	30	34	20	6	1	
K			2	6	8	20	18	18	14	6	1	
L				2	6	6	8	8	8	4		

Pattern: 1½-in. Rockwood "W-22 Water Fog," fixed 60° (Code 8-6)



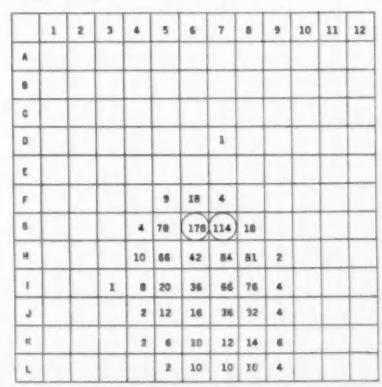
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E						2	2	2	2			
F					4	18	21	22	14	2		
G				8	20	51	94	108	68	27	6	
H			1	16	34	56	60	47	75	50	23	
I			1	14	24	46	40	41	42	46	31	1
J			2	9	14	22	20	29	32	24	16	1
K				4	8	9	8	17	22	12	6	
L					2	2	4	6	10	8	2	

Pattern: 1½-in. Rockwood "N-22 Water Fog," fixed 60° (Code 8-9)



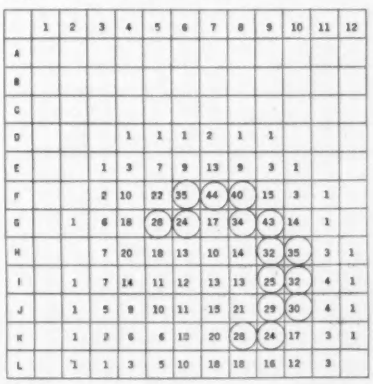
	1	2	3	4	5	6	7	8	9	10	11	
A												
B												
C												
D												
E						3	5	4				
F					2	53	96	6	22	1		
G				1	10	100	68	104	72	4		
H				1	11	46	34	50	80	8	1	
I				1	7	18	31	46	58	11	1	
J				2	3	10	18	26	30	8	1	
K				1	3	4	7	13	12	6		
L					2	2	4	6	8	2	1	

Pattern: 1½-in. Rockwood "Type 50," fixed 60° (Code 8-10)



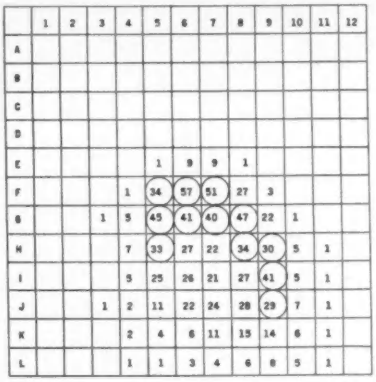
	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D							1					
E												
F						9	18	4				
G					4	78	178	114	18			
H					10	86	42	84	81	2		
I				1	8	20	36	66	76	4		
J					2	12	16	36	32	4		
K					2	6	10	12	14	6		
L						2	10	10	10	4		

Pattern: 1½-in. Rockwood "Type 50" with diffusion head, fixed 60° (Code 8-12)

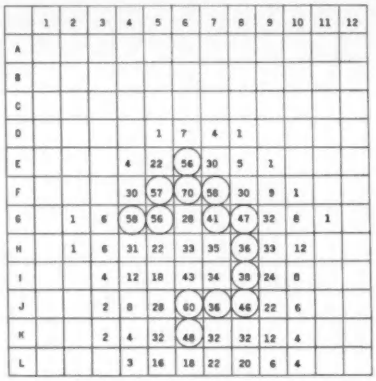


	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D				1	1	1	2	1	1			
E			1	3	7	9	13	9	3	1		
F			2	10	22	35	44	40	15	3	1	
G		1	6	18	28	24	17	34	43	14	1	
H			7	20	18	13	10	14	32	35	3	1
I		1	7	14	11	12	13	13	25	32	4	1
J		1	5	8	10	11	15	21	29	30	4	1
K		1	2	6	6	10	20	28	24	17	3	1
L		1	1	3	5	10	18	18	16	12	3	

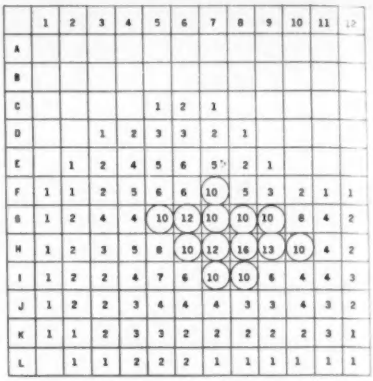
Pattern: 1½-in. Lum "Unique, No. 1 Tip," 30° (Code 9-1)



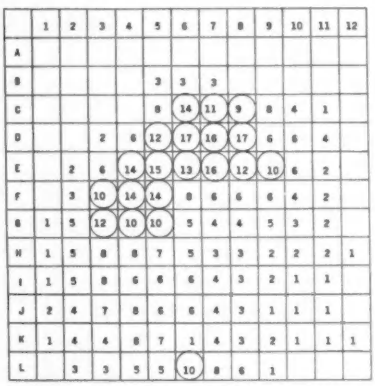
Pattern: 1½-in. **Lum** "Unique, No. 2 Tip" 30° (Code 9-2)



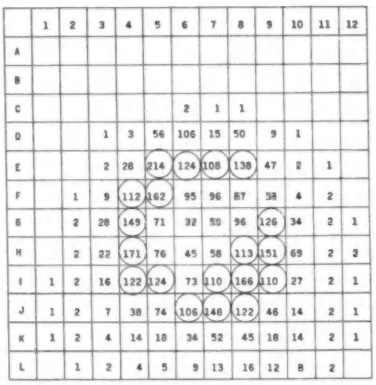
Pattern: 1½-in. **Wornall**, adjustable, 30° (Code 10-2)



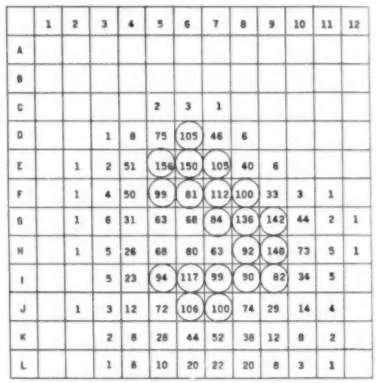
Pattern: 1½-in. **Bete** "G-10," fixed pattern (Code 11-3)



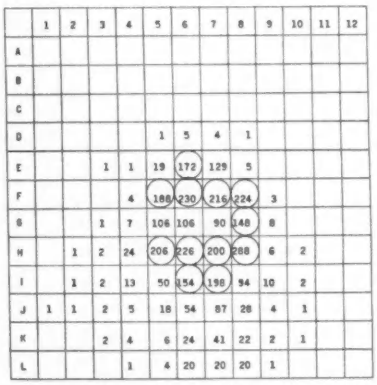
Pattern: 1½-in. **Bete** "G-15," fixed pattern (Code 11-4)



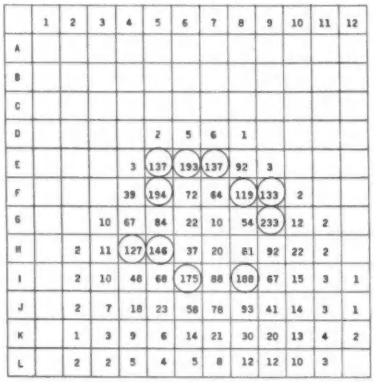
Pattern: 2½-in. **American LaFrance** "10-E," adjustable, 30° (Code 1-4)



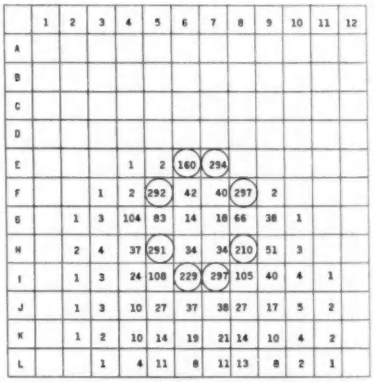
Pattern: 2½-in. **Grinnell** "Flamebuster," fixed, 60° (Code 3-3)



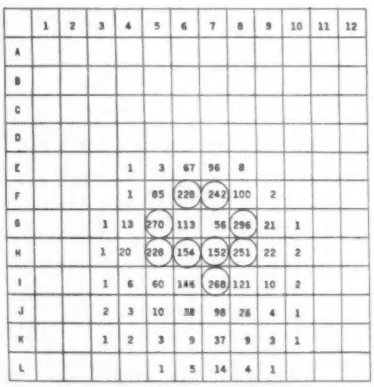
Pattern: 2½-in. **Elkhart** "Mystery D-200," adjustable, 30° (Code 4-3)



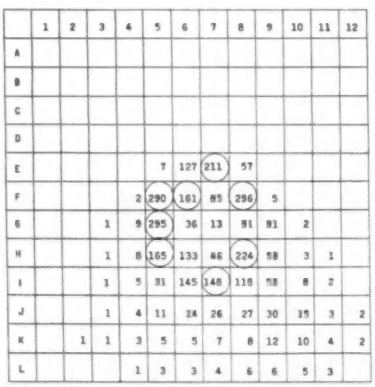
Pattern: 2½-in. **Elkhart** "Jumbo J-200," adjustable, 30° (Code 4-4)



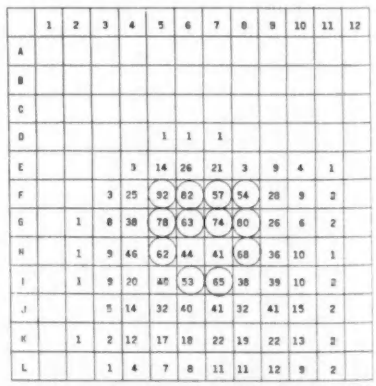
Pattern: 2½-in. **Elkhart** "Navy Jumbo JN-200," adjustable, 30° (Code 4-5)



Pattern: 2½-in. **Elkhart** "Select-O-Stream," adjustable, 30° (Code 4-8)



Pattern: 2½-in. **Akron** "500 gpm Fog Hog," adjustable, 30° (Code 5-9)



Pattern: 2½-in. **Akron** "4-NAP," fixed, 120° (Code 5-18)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					3	13	32	1				
E				8	46	120	84	2	2	4		
F		2	23	141	209	76	8	30	149	26	1	
G		5	21	73	159	184	211	135	146	25	3	
H		3	8	33	145	147	130	157	156	25	3	
I	1	2	6	19	47	173	142	110	54	20	3	1
J	1	2	3	9	19	55	42	72	27	12	3	2
K		1	2	5	5	14	14	32	17	9	2	1
L				2	2	7	5	13	13	7	3	

Pattern: 2½-in. **Akron** "6-FOA-250 Deluge Fogtip" fixed, 70° (Code 5-19)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					2	27	42	31	9	2	1	
E			1	2	22	113	152	150	143	57	5	1
F			1	10	105	190	134	122	135	88	23	2
G			2	22	122	139	77	70	119	154	70	9	1
H			3	18	100	151	105	95	113	123	55	12	2
I			3	11	55	152	129	120	126	165	44	8	3
J	1	2	9	25	55	130	84	94	76	44	8	2
K	1	1	5	13	21	36	47	43	29	24	9	2
L		2	3	5	11	13	14	20	15	13	5	

Pattern: 2½-in. **Akron** "6-FOA-500 Deluge Fogtip" fixed, 70° (Code 5-20)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					1	4	2	3	1			
E				3	9	67	26	30	5			
F			1	9	84	130	132	96	28	4	1	
G		1	3	37	111	176	89	152	54	9	1	
H			3	44	99	69	100	102	76	19	1	
I			3	18	30	57	68	52	62	11	2	
J			1	8	12	45	31	26	25	8	1	
K			1	3	4	7	13	12	8	5	1	
L			1	1	1	3	5	5	5	3	1	

Pattern: 2½-in. **Rockwood** "SG-48," fixed 60° (Code 8-3)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C							9	2	5	20		
D			1	24	170	35	82	179	15	2		
E			4	40	148	97	165	69	46	44	3	
F		2	27	82	148	110	120	112	150	129	73	2
G		16	107	134	122	127	123	75	166	38	28	4
H	2	12	35	76	96	92	97	84	62	170	13	4
I	2	5	33	200	80	138	58	156	49	85	25	4
J	3	7	24	64	42	228	44	120	75	23	19	4
K	3	5	8	16	25	64	29	39	29	9	11	3
L		3	3	8	9	15	8	15	14	4	4	

Pattern: 2½-in. **Rockwood** "B-SA-1458," fixed 60° (Code 8-4)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B							1	7				
C						7	65	28				
D				2	56	50	154	14	10	2		
E				3	66	94	99	47	139	66	8	
F			1	11	82	179	105	85	138	102	18	3
G			49	68	98	97	80	62	116	140	86	4	1
H	1	16	72	81	64	134	70	88	108	101	40	2	
I	1	5	20	73	121	74	92	83	82	35	21	3	
J	1	3	9	41	66	54	98	73	61	12	5	2	
K		2	3	9	9	42	70	26	17	6	2	1	
L		1	2	3	4	22	28	13	5	3	1	

Pattern: 2½-in. **Rockwood** "N-23 Water Fog," fixed 60° (Code 8-5)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					6	7	7	1				
E				3	11	48	19	24	13	1		
F			1	12	41	95	109	48	20	10		
G		1	6	34	106	187	125	134	54	33	2	
H		1	9	36	47	92	92	129	66	19	2	
I		1	7	14	17	95	81	43	61	18	2	
J		1	3	6	11	46	39	23	30	15	3	
K			1	3	4	11	15	18	10	8	3	
L					1	3	5	5	4	3	2	

Pattern: 2½-in. **Rockwood** "W-22 Water Fog," fixed 60° (Code 8-8)

	1	2	3	4	5	6	7	8	9	10	11	12
A								6	292	5		
B								9	29	1		
C		297	21				1	9	8	2		
D		20	34	2	1	1	8	3	1			
E		9	10	3	1	2	3	2	1	2	3	8
F		3	4	3	0	1	1	1	1	3	51	142
G		1	2	1	1	1	1	1	2	5	10	10
H		1	1	1	0	1	1	1	1	3	3	3
I	80	27	2	1	1	1	1	1	2	2	2	1
J	27	10	5	1	1	1	1	1	2	8	8	2
K	9	4	2	1	2	5	2	1	2	9	104	47
L		1	1	2	73	33	5	1	1	5	19	

Pattern: 2½-in. **Lum** "Unique, No. 10 Tip," fixed 60° (Code 9-8)

	1	2	3	4	5	6	7	8	9	10	11	12
A					2	1	1	4	1			
B			1	2	2	4	4	4	3			
C		2	3	4	10	14	19	16	6	4	2	
D	2	3	5	45	90	74	64	50	27	13	4	3
E	3	4	15	103	87	77	76	64	66	38	10	4
F	4	6	48	92	54	25	32	47	76	87	25	6
G	6	12	108	72	26	10	12	22	47	90	48	6
H	6	12	75	62	26	17	14	19	31	88	67	8
I	6	10	56	54	31	22	19	25	33	81	52	10
J	4	9	34	86	43	32	28	35	52	74	34	7
K	3	5	17	45	47	41	42	50	48	42	17	7
L		5	8	23	32	43	40	44	29	20	9	

Pattern: 2½-in. **Lum** "Unique, No. 8 Tip," fixed fog (Code 9-9)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D												
E					3	8	8	2				
F				2	28	54	40	14	1			
G				4	38	49	47	45	12	1		
H			1	6	34	32	23	40	18	2		
I			1	5	30	30	29	34	12	2		
J			1	3	19	25	26	23	9	1		
K				3	8	10	13	11	4			
L				1	3	6	6	7	4	1		

Pattern: 2½-in. **Lum** "Unique, No. 9 Tip," fixed 30° (Code 9-10)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D						1	1					
E				1	5	32	33	11	1			
F				6	86	77	64	68	26			
G			1	12	44	33	25	49	54			
H				5	42	30	23	38	56	5		
I			1	5	43	33	31	43	52	3		
J			1	2	19	33	40	50	24	3		
K				1	3	8	19	22	11	2		
L				1	1	3	6	8	7	2		

Pattern: 2½-in. **Lum** "Unique," fixed 30° (Code 9-12)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B												
C												
D					1	3	38	195	176	1		
E				1	71	125	155	110	47	8		
F				12	290	129	68	61	99	3		
G	1	2	9	13	23	70	67	40	8	2	1	
H	1	2	3	3	126	101	66	80	122	231	2	1
I		2	2	5	20	91	109	115	122	49	6	1
J		1	2	4	25	215	88	63	19	10	3	2
K	1	2	3	2	15	29	14	15	7	6	3	2
L		2	2	2	4	6	5	6	5	3	2	

Pattern: 2½-in. **Wornall**, adjustable, 30° (Code 10-3)

	1	2	3	4	5	6	7	8	9	10	11	12
A												
B						6	52	2				
C			34	13	23	129	203	111				
D		5	224	103	105	127	136	94	35	31		
E	11	69	138	150	112	88	78	71	178	128	8	
F	124	296	156	54	63	53	59	90	179	56	12	
G	53	70	115	50	48	60	68	85	106	94	105	1
H	9	16	24	23	55	55	67	84	49	41	13	3
I	5	5	14	47	51	59	74	94	52	15	5	4
J	2	4	12	29	50	78	90	95	121	29	4	3
K	1	3	8	13	22	48	86	48	40	15	6	2
L		4	3	5	10	16	33	41	21	9	3	

Pattern: 2½-in. **Bete** "Model 500," fixed 90° (Code 11-8)

New Fire Safety Provisions for

Oil Burning Equipment

A report by NFPA Flammable Liquids Engineer Miles E. Woodworth of changes in NFPA Standard No. 31 which are of immediate concern to fire chiefs and fire fighters.

WHAT can be done to minimize the fires and fire deaths caused by "oil stoves"?

The NFPA Staff has been asked this question many times. It is frequently discussed at firemen's meetings. In a few sections of the country during last year's heating season, it was an important news item because of a series of fires causing loss of life, particularly for children.

According to Table 32 in the 11th Edition of the NFPA Handbook of Fire Protection, of the known causes of fire, "oil stoves," both portable and non-portable, are the greatest contributors to loss of life in residential occupancies.

During a panel discussion of the hazards of "oil stoves" at the 1953 NFPA Regional Meeting, held in Providence, Rhode Island, one fire chief suggested that a special investigation be made of oil burning equipment fires. Accordingly, the NFPA Flammable Liquids Field Service subscribed to press clipping services and developed a special oil burner report form, which was sent to fire departments throughout the nation. Hundreds of fire chiefs cooperated in sending requested information. The tabulated results of this survey of the 1953–54 heating season reports were sent to every participating chief and were also reported to the 1954 NFPA Annual Meeting. The results of the 1954–55 survey will be reported during the 1955 International Association of Fire Chiefs' Convention at Omaha. (See page 16.)

The NFPA Sectional Committee on Liquid Fuel Burning Equipment was extremely interested in the results of this investigation. For the past three years this Committee, of which two fire marshals are members, has been making a complete revision of NFPA No. 31 — "Standards for the Installation of Oil Burning Equipment." The new edition was approved during the 1955 NFPA Annual Meeting and is now available.

Since there are many types of oil burning equipment, known by various names in different sections of the country, seven pages of definitions are included in this standard. The Underwriters' Laboratories, in "listing" such equipment, will use the same terminologies as contained in Standard No. 31.

The investigation of these oil burning equipment fires disclosed the need for adequate draft and combustion air for safe operation of the stoves. Hence this new standard includes a section giving detailed instructions for combustion air and chimney design. For example, the flue pipes from natural draft burners are limited to ten feet, without the aid of a draft booster. Other details necessary for adequate draft are also outlined.

Various types of tank installations are defined and the number and location of drums of fuel oil for use with heating and cooking appliances is regulated. This latter item has been of considerable interest to the fire services and the fire fighting experiences of the chiefs participating in the survey emphasized the need for this requirement in the standard.

Clearances for ten specific types of oil burning appliances are outlined, as well as the clearance requirements for various types of cooking and heating appliances.

Drip pans for range burners and portable kerosene heaters are now required, as are primary safety controls for this type of equipment. The means of filling supply tanks, leveling of the equipment and other general precautions are also outlined.

It is hoped that many fire officers and other fire department members will become familiar with the provisions of Standard No. 31. If municipalities adopt its suggestions as law, and this law is then enforced, there should be an appreciable reduction in the number of fires and loss of life due to improper installation or operation of oil stoves. NFPA No. 31 is available as a separate pamphlet from the NFPA (50 cents), and is printed in the National Fire Codes, Volume I.

Miles E. Woodworth, NFPA Flammable Liquids Engineer, and Clark F. Jones, NFPA Gases Engineer, serve respectively as Secretary of the Committee on Flammable Liquids and the Committee on Gases. Each maintains continual contact with many individuals and organizations in the particular industries for which he provides field service. Hence, each of these men is informed of the new and special fire problems which may result from the use, storage or handling of these fuels.

Many fire chiefs or other readers of this magazine may obtain additional information on the subjects covered on these pages by writing to the appropriate engineer at the NFPA Executive Office, 60 Batterymarch Street, Boston 10, Massachusetts. Copies of NFPA Standards No. 31 and 58 may be obtained from the same address.

Proper understanding of liquefied petroleum gas and careful techniques resulted in the stopping of a leak in this smashed LP gas railroad tank car and successful unloading. This incident occurred in Columbia, South Carolina, and is described more fully below.

Things to Consider about

LIQUEFIED PETROLEUM GAS

A discussion of fire fighting procedures and important new provisions in NFPA Standard No. 58, by Clark F. Jones, NFPA Gases Engineer.

A TWO and one-half story frame dwelling was burning briskly with flames visible from several windows and plenty of smoke showing when the first fire truck arrived on the scene. After ascertaining that all persons were out of the building, the Chief soon had hose lines working on the fire. No rescue operations were required. Suddenly, a shout went out, "Watch those gas bottles!" The Chief had seen the liquefied petroleum gas installation beside the house and ordered the fire fighters to cover the gas containers with water spray, shut off the cylinder valves, cut or break the low pressure lines beyond the regulator, and remove the cylinders to a safe location.

This is an example of what has happened many times, and can happen when fire fighters use good judgment and handle well a situation which could become rather serious if this fuel is added to a working fire. Such teamwork indicates that the fire fighters have been well instructed about LP gas.

Fires in escaping liquefied petroleum gas should, in general, be extinguished only by stopping the flow of gas. In case the flow cannot be stopped, it is usually safer to let the gas burn, using water spray to absorb heat and prevent ignition of exposed combustible materials, rather than to extinguish the flames (which may result in an explosion if the gas continues to flow). Flames from small leaks may be extinguished with carbon dioxide or dry chemical extinguishers, when necessary, to permit closing valves to stop flow of gas.

Proper handling and good judgment prevailed on several occasions recently involving LP gas losses without fire. One occurred in Los Angeles, California, when an improperly chocked tank truck connected to an underground storage tank, moved and broke the tank connection releasing over 4,000 gallons of LP gas. Quick thinking on the part of employees and prompt action by the Los Angeles Fire Department in dispersing the vapors prevented a serious incident. Then on January 31, 1955, an LP gas tank car was involved in a train wreck near Columbia, S. C. Here a coupling of the next car was smashed into the LP gas tank car. The impact put a small split in the tank and a leak developed. Local authorities called the South Carolina State Insurance Commissioner's office and the Chief LP Gas Inspector responded. He was able to plug the leak after some difficulty. With the cooperation of railroad officials the tank car was moved to a nearby LP gas distributor's storage area and successfully unloaded without further incident. These examples point out that with careful planning and proper knowledge, LP gas inadvertantly released can be handled safely if good judgment prevails.

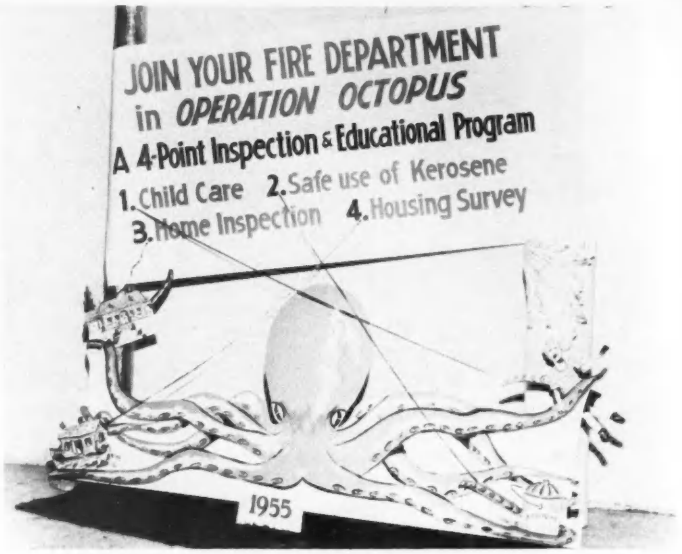
Fire chiefs and fire fighters are urged to review carefully NFPA Standard No. 58 which deals with the storage and handling of LP gases. The NFPA Committee on Gases has been preparing good practice recommendations and standards on the use of this fuel for thirty-one years. The standards have been revised annually in a consistent effort to obtain technically adequate and practical requirements for the rapid growing industry.

In 1954 a new division was added to Standard No. 58 to provide for requirements pertaining to LP gas service stations. The use of LP gas as a motor fuel also has been increasing very rapidly. It is used not only on farm tractors and highway vehicles, but its application to stationary units and industrial trucks has shown a marked increase within the past year. There has been a large number of liquid fueled farm and industrial truck vehicles converted to LP gas fuel use. As a matter of fact, Underwriters' Laboratories, Inc., in Chicago, has developed "an inspection by report" procedure in order to be helpful in this conversion program. At the recent NFPA Annual Meeting at Cincinnati the following revisions of Standard No. 58 were adopted:

A new paragraph was added specifying the type and quantity of odorant to be used with LP gas.

(Continued on page 47)

"OPERATION OCTOPUS"


JOIN YOUR FIRE DEPARTMENT
in OPERATION OCTOPUS
A 4-Point Inspection & Educational Program
1. Child Care 2. Safe use of Kerosene
3. Home Inspection 4. Housing Survey
1955

Window display poster featured in stores and other occupancies throughout the City of Memphis.

Memphis, Tennessee, combines effective fire prevention campaigns in 4-point program.

NOT content with the renowned fire prevention achievements in Memphis, Tennessee, in recent years, Chief John C. Klinck and other civic leaders have launched another forceful educational program, designed to bring greater assurance of fire safety to the people of that city. Called "Operation Octopus" this extensive 4-point program combines three previous successful campaigns — "Anti-Careless Use of Kerosene" —"Unattended Children" and the "House-to-House-Inspection Program," with a general survey of buildings for the City's slum clearance program.

For many years Memphis has been one of the leading cities in the nation in the field of fire prevention and fire waste control. Eight times since 1936 it has won the first prize in its municipality class in the NFPA Fire Prevention Week Contest. It has also won top honors on three occasions in the National Fire Waste Contest conducted by the U. S. Chamber of Commerce.

Typical task force of one fire company inspecting a neighborhood during the 4-point program of "Operation Octopus."

In this new campaign the octopus was chosen as a symbol to focus attention of the public on the many aspects of fire safety. Eye-catching signs were placed in front of all fire stations, on all fire apparatus and on a special street railway bus which traveled through the city on a different route each day. (See FIREMEN for July, 1955.) Thousands of cards were printed describing the four major objectives of the program and giving the fire department telephone number. These were distributed to dwellings visited in the house-to-house inspection program, and were also given out by many business concerns. Window displays and generous publicity from newspapers, television and radio stations added force to the program.

As reported in the September, 1952, issue of FIREMEN magazine the Fire Department, under Chief John C. Klinck, developed a special program for minimizing fire deaths resulting from improper use of kerosene. In this program, a safety committee was appointed, including representatives of the oil industry and kerosene distributors, and an inspection and education program was developed. Uniformed fire fighters made some 20,000 house-to-house calls to distribute informational literature, and by personal contact with the individual users of kerosene, they effectively described safe methods of using kerosene in the home. The result of this campaign, as reported in the September, 1952, FIREMEN, was a significant reduction in the amount of fires and fatalities due to misuse of kerosene.

Two years after this program had been established, fire officials became aware of the serious problem of unattended children losing their lives in fires. In the first few months of 1954, six children perished in fires in Memphis because their parents had left them alone, at home, and in some cases had locked the houses leaving no means of escape. These incidents occurred for the most part in the Negro section of the city. (See October, 1954, FIREMEN.)

Chief Klinck conferred with other fire officers and with a special committee of Memphis civic, religious and judicial leaders. As a result "Operation Unattended Children" became another important phase of the year-round fire prevention campaign. Fire fighters made more than 15,000 visits to dwellings where children lived to distribute special literature and to talk to parents of the dangers of leaving children unattended.

ONE outcome of this Unattended Children Campaign was the proposal of the following ordinance to the City Legislators:

An ordinance to amend the Memphis Municipal Code of 1949. As amended, to provide an additional Section 802.1. Prohibiting the locking or leaving of a child in a building so that in the event of a fire or other calamity, escape cannot be made, unless an adult is present capable of protecting such child from the consequences of fire or other calamity, and to provide penalties for the violation of this ordinance.

Section 1. Be it ordained by the Major and Board of Commissioners of the City of Memphis that the Memphis Municipal Code of 1949, as amended be and the same is hereby amended by adding a new section thereto as follows:

Section 802.1. Leaving or fastening child in a building: misdemeanor It shall be unlawful to leave any child locked or fastened in a building so that in case of fire or other calamity, such child cannot escape, unless the child is attended at all times by an adult capable of protecting such child from the consequences of fire or other calamity.

Section 2. Be it further ordained that violation of the foregoing section shall be a misdemeanor.

Section 3. Be it further ordained that the foregoing ordinance take effect from and after it's passage, the matter being one of urgency and the public welfare requiring it.

Chief Klinck reports that the visits of Memphis' uniformed firemen are received cordially by householders. The firemen discuss each point of "Operation Octopus" and the more pertinent subjects for the householder are explained in detail. This year, 121,435 Memphis homes have been visited in "Operation Octopus." Of this number, there were 50,000 homes where no one was home. Firemen left literature at these homes together with a personal note requesting a future appointment. Response to these notes was outstanding and a special crew is now making the second calls on appointment.

The unattended children campaign produced such excellent results that it has been incorporated as part of the year-round fire prevention program and was part of the substantial report submitted by the Fire Department in last year's NFPA Fire Prevention Week Contest.

During their inspections and dwelling visits Memphis firemen are also noting the location and of all substandard housing in the city. This information is being compiled for use in the City Supplement Clearance Program. Fire hazards and structural conditions of every dwelling unit are being tabulated and the 4-point program survey has already been completed in 48 of the 90 census tracts in the city.

Chief Klinck also reports that "Operation Octopus" will continue from year to year, and each new safety campaign will be indicated by an arm of the octopus.

Memphis District Chiefs being "briefed" on 4-point program and receiving packets of colorful 5¼ x 9-in. cards which fire fighters will distribute during inspections. The cards contain simple instructions for fire safety and the Fire Department telephone number. Cost of the cards and printing was paid for by merchants in the City.

Memphis fire fighters are continuing their city-wide campaign of educating the public in the safe use of kerosene.

Completed inspection forms for some of the survey tract in Memphis are shown here. In addition to designating fire hazards in the various buildings, firemen have also indicated items of importance for the housing survey.

Wide World Photo

Scene at Midway Airport just after Chicago fire fighters had rescued 21 passengers from this overturned Convair. After fire was extinguished by low pressure carbon dioxide, hose lines from a pumper at left washed away remaining gasoline spill.

Getting Those

Precious Seconds for Rescue!

George H. Tryon, III, NFPA Assistant Technical Secretary and Secretary of the NFPA Committee on Aviation and Airport Fire Protection, brings out the importance of proper aircraft design and fire fighting techniques in this discussion of the crash of a Braniff Convair at Midway Airport in Chicago, Illinois, on July 17, 1955.

TWENTY-ONE of the occupants of this plane undoubtedly owe their lives to the Chicago Fire Department and to Convair (General Dynamics Corporation).

The fire extinguishment was nothing short of sensational! One 2¼-ton low pressure carbon dioxide unit, manned by personnel of the Midway Airport Station of the Chicago Fire Department, killed the flames which resulted from the crash impact within 2½ minutes! The total amount of carbon dioxide used was 3,700 pounds, dispensed from the truck's overhead boom nozzle and two hand lines. Of the 800 gallons of gasoline aboard at the time of impact, it is estimated that only 150 burned!

The rescues undoubtedly could not have been accomplished had not the design of the aircraft fuel tanks been such as to segregate fairly effectively the fuel from the passenger compartment. Since the tanks were located outboard of the engines, flames did not immediately involve the fuselage and what fire remained aboard the aircraft when it came to a stop was in the outboard wing sections where extinguishment could much more easily be accomplished.

The impact forces were such that the aircraft landed upside down, smashing the pilot's compartment, tearing off the right wing, the right engine and the tail assembly. Rescue operations were extremely difficult and took two hours to complete. Obviously they could not have been completed had not fire extinguishment preceded the attempts.

Newspaper accounts indicate that the landing was made under relatively poor visibility and that the plane struck an 18-foot high electric sign at a gasoline filling station just outside the airport boundary. This impact threw the plane out of control. It next crashed through a section of the airport boundary fence and hit the ground inside the airport proper. The right wing was torn off at this impact and the main cabin section continued further, coming to rest in an inverted position after hitting several airport runway boundary lights. The pilot's compartment and the tail section were completely crushed by these impact forces and the fuselage was so deformed that subsequent forcible entry for rescue work was made very difficult.

The fire station at Midway Airport is located within 500 yards of where this accident occurred. With the alarm given by the control tower over the emergency loud speaker system, response of equipment was most prompt. Arrival of fire fighters, and equipment is estimated to have been within thirty seconds; but already there was fire in the left wing and gasoline was burning on the ground where it had spilled following the impacts.

The inverted position of the plane, the deformation of the fuselage, plus the fire conditions, made immediate rescue attempts impossible. Concentration was thus first placed on extinguishment. This was accomplished very promptly with 3,700 pounds of low pressure carbon dioxide from the airport crash fire vehicle.

Water-fog was used to wash away the gasoline which lingered in the area after the extinguishment had been completed. The water supply was from a sub-surface hydrant but some delay was involved in securing hose lines as part of the tail assembly was draped over the cover of the hydrant nearest the accident site.

Of the twenty-two occupants who died as a result of the accident, twenty-one were killed by the impact forces and only one, the hostess, is thought to have perished due to burns received from the fire. Twenty-one persons were rescued alive and, up to this date, none of these have succumbed due to the injuries they received.

Reaching the victims was a time consuming and difficult task due to the smashed condition of the fuselage and great care had to be exercised due to the possibility of aggravating injuries already received and the fact that some of the passengers' clothing was saturated with gasoline. Axes, crowbars, hacksaws and hand and powered jacks were used by fire fighters, the crash crew being aided by additional fire department personnel who reached the scene in pumpers, squad cars and a hook and ladder.

Concerning such attempts at forcible entry, Battalion Chief Hasnerl, who was in charge of the fire attack, made some interesting comments in his report to the Chicago Fire Department Bureau of Fire Control and Extinguishment. One of his recommendations was that each piece of apparatus at the airport be equipped with a pair of heavy-duty bolt cutters and a pair of heavy-duty metal snips. (Such equipment is also recommended in NFPA Standard No. 403 — "Suggested Aircraft Rescue and Fire Fighting Equipment for Airports" — 50 cents per copy. — Ed.)

Chief Hasnerl also commented as follows:

"At the Braniff plane crash, after the first opening was made with an axe, I crawled into the fuselage and released and removed several victims. The most difficult work was removing the backs of seats to get at the victims. With a good pair of heavy-duty bolt cutters this would have been accomplished much more quickly and the victims extricated.

"While I worked inside of the plane, other firemen continued using axes to make additional and larger openings. I felt every blow as the fire axes hit the fuselage and I wondered how it felt to the victims, some already suffering from shock . . . and if they or I would be hit with an axe. After the first opening was made, a pair of heavy-duty cutters could have done the job more quickly, more quietly, and much more safely."

The Convair, Models 240 & 340, have had a remarkable record testifying to their "crash worthiness" from the fire viewpoint.

NFPA Special Aircraft Accident Bulletins have illustrated this fact (reference Numbers 49–6, 49–9*, 49–10*, 51–2, 51–10). NFPA Aviation Bulletin No. 82 further analyzes the importance of the crash fire safety of the design of the Convair in relation to aircraft of other types in current commercial transport service.

This accident, then is another indication that where fire consciousness is exhibited in aircraft design, aircraft rescue and fire fighting procedures may be successfully accomplished. With the host of tragedies which fill the records of crash fire experience, the influence of aircraft design and proper fire fighting and rescue techniques leading to the successful handling of this accident stands out as a source of real encouragement to those devoted to life safety from fire in aviation.

*Out of print. NFPA Special Aircraft Bulletins are available at 25 cents each.

Photo by Steve Cole

Andover, Ohio, August 10, 1955 — Twenty-two persons died as a result of an explosion and fire that destroyed a two-story frame restaurant and dairy products retail store in this northeastern Ohio farming community during a severe electrical storm. Fire extended to three other adjoining buildings. Telephone facilities in the town were disrupted by the storm prior to the explosion. Local volunteer fire department had been called to answer another alarm, and, when returning to town, saw the fire and immediately went into action. Photo above shows fire conditions just before fire fighters arrived. Loss was estimated at over $100,000. A preliminary investigation by the State Fire Marshal's investigating team has not disclosed cause of the disaster. Some officials have indicated that flammable vapors coming from the sewer could have been the cause. Complete details of this incident will be reported in the October issue of the NFPA *Quarterly*.

Wide World Photo

Typical scene in Andover as fire fighters uncover one of the bodies after fire was controlled to permit rescue attempts.

a report on "Sparky"

A group of school children in Calgary, Alberta, Canada, listening to a fire prevention lecture by Inspector Marks of the Calgary Fire Prevention Bureau.

by Robert W. Schuette, Manager, NFPA Public Relations Department

SINCE 1952 the National Fire Protection Association has had the cooperation of The Advertising Council in promoting fire prevention on a national scale, through newspapers, radio and television. In June, 1952, "Sparky" the Dalmatian fire dog was adopted as the symbol of this campaign, and since that time his features have become widely known to children and adults throughout the United States and Canada.

In the October, 1954, issue of FIREMEN magazine a new phase of this campaign was launched with the announcement of Sparky's Fire Department with headquarters in Boston, Massachusetts. Many fire departments have made good use of Sparky for educating children in the community in fire prevention. Summarized below are some of these activities, together with an outline of proposed nation-wide fire prevention publicity for 1955.

Sparky's Fire Department

At the start of July, 1955, total membership in Sparky's Fire Department was 21,609 children. This included 5,087 individual memberships (youngsters who have sent 25 cents to Sparky's Fire Department, Boston 1, Massachusetts); 13,022 group or club memberships (sponsored by fire departments, scout groups, women's clubs, schools, etc.) and 3,500 individual memberships donated to radio and television stations at the start of the program in October, last year.

A trend now evident in these memberships shows that the majority of youngsters are enrolled in "group" programs. To date there are some 170 group operations on record, and most of these are conducted in conjunction with school programs.

Geographically, this fire prevention educational project has been adopted by communities throughout North America — some of the most active being Calgary, Alberta; Wyandotte, Michigan; Talladega, Alabama; Great Central, British Columbia; Elmhurst, Illinois; Sandusky, Ohio; Mahtomedi, Minnesota; Piedmont, California; Port Angeles, Washington; Fort Sam Houston, Texas; Fort Sill, Oklahoma; Opa Locka, Florida. Even Tokyo, Japan, has an enthusiastic group participating. (See picture.)

Here are some features of these community activities. One afternoon a week, in Marathon, Florida, the fire house becomes a classroom for young Sparky officials. . . . After a program of fire-prevention films and questionnaires co-sponsored by the fire department and the Lions Club, all elementary school children in Anniston, Alabama, received Sparky badges at a special graduation exercise. . . . In Calgary, Alberta, Chief D. J. McDougall's Fire Prevention Bureau won cooperation from children, parents, and school teachers who supported a Sparky home inspection program. . . . The Keyser, West Virginia, Fire Department, also enrolled the young-

(Left) Sparky's Fire Department in Japan includes some 60 youngsters at the Johnson Air Base. Children of Air Force personnel are shown here with T/Sgt. J. J. Cherniga of the Base Fire Department who started the overseas Sparky project and who reports lots of enthusiasm for the idea among children and their parents.

sters of that town in Sparky's Fire Department. (Children may be enrolled in Sparky's Fire Department, Boston 1, Massachusetts for 25 cents each as individual members, or 20 cents each as members of a group. Fire departments, school teachers and others who encourage children to join should make certain that the proper amount of money is sent for each child, and that names and addresses are clearly and correctly written — ED.)

NFPA plans for stepping up the nation-wide program include new Advertising Council newspaper advertisements, cooperation with children's television programs and established youth groups (Cub Scout, schools), and further membership information in NFPA printed matter for children (comic books, home inspection blank, coloring book).

During Spring of this year, while schools were still open, new memberships in Sparky's Fire Department were coming in at a rate of over 1,000 each week, and it is expected that this number will substantially increase in the Fall upon the reopening of schools. Various groups conducting local Sparky's Fire Departments have already indicated that they intend to step up their programs by Fire Prevention Week. Both the new Sparky comic book and the Rand-McNally Sparky book will get their widest circulation in this coming fall. The comic book is available from NFPA while the Rand-McNally book is being sold in drug and department stores.

Public Service Advertising

The Sparky fire prevention campaign, conducted by The Advertising Council, continues to be one of the favorite campaigns of The Advertising Council staff as well as one of its most popular ones in terms of newspaper mat requests and use by other media such as car cards, three-sheets, radio and television.

During the year The Advertising Council assisted in the special oil stove fire safety drive by sending out special radio and television announcements which were used very widely last winter. Also, the Ad Council scheduled similar special warnings for radio and TV during August, on the use of gasoline for outboard motors and power mowers.

Ad Council cooperation resulted in prominent use of Sparky in general advertising, which included a two-page, four-color ad in the Christmas editions of the largest consumer magazines in the United States, and a Sparky illustration in a number of black and white Ad Council "house" ads which have since appeared in various national publications.

New fire prevention campaign photo of Advertising Council. (See page 15.)

Plans for the 1955 Sparky campaign call for: 10,000 "three-sheets" (already distributed); Radio and television allocations in October and November ("flip" cards and copy material only to be provided for television this year — no filmed "spot" announcements); 150,000 car cards to go up approximately November; newspaper proof sheets to be distributed to the nation's dailies and weeklies and to all NFPA members in September.

Uniform Building Code 1955, Short Form

THE July-August issue of NFPA FIRE NEWS called attention to one of the standard building codes used widely as a model in preparing municipal building codes. This is the Uniform Building Code, sponsored by the Pacific Coast Building Officials Conference, a 1955 edition, 384 pages, which is now available.

The Pacific Coast Building Officials Conference has subsequently published a 1955 edition of the Short Form of the Uniform Building Code, a publication of 88 pages. This provides a complete code for buildings which are not over two stories in height or more than 7,500 square feet in ground floor area.

A 48-page pamphlet entitled "Dwelling House Construction under the Uniform Building Code, 1955 Edition," provides a selection of information from the Uniform Building Code applying to the construction of one or two-story dwelings of stud wall or masonry.

Requests for information about these volumes and other volumes associated with the Uniform Building Code should be addressed to the Pacific Coast Building Officials Conference, 610 South Broadway, Los Angeles 14, Calif.

Conference in Maine

THE Maine Fire Chiefs Association will hold a Conference at Lewiston, Maine, at the Le Montagnard Snowshoe Club near No Name Pond, Tuesday, October 18, 1955. An estimated 300 to 400 fire chiefs are expected to attend and some 100 gifts have been donated by fire equipment distributors. These will be distributed as door prizes. Zephirin F. Drouin, chief engineer of the Lewiston Fire Department, will be host to the Conference. Chief Drouin will retire on pension shortly afterwards.

Scheduled speakers include Honorable Edmund S. Muskie, Governor of Maine; Mayor Ernest Malenfant of Lewiston; Attorney Frank M. Coffin and Chief J. Coleman Miller of the Auburn, Maine, Fire Department.

"Red-Faced Fire Marshal"

ONE municipal fire marshal had an embarrassing experience recently. Highly flammable paper and fire crackers which he had seized from citizens were involved in an explosion which wrecked the marshal's office in fire headquarters. The building also housed the fire department, administrative offices and three fire fighting units.

Children Everywhere are Joining

Sparky's Fire Department

To Promote Home Fire Prevention All Year 'round!

Right now, for your own Fire Prevention Week Program, get the kids interested in Sparky's Fire Department. All they have to do is send a quarter (25c) to Sparky's Fire Department, Boston 1, Mass., and they will receive Sparky's Inspector's Badge, a colorful Membership Card and an Official Inspector's Manual to help them prevent fires. Each member brings the Membership Card to *your department* for official signature.

BADGE

OFFICIAL MEMBERSHIP CARD

INSPECTOR'S MANUAL

Youngsters in your community may order their membership kits directly from Boston or you may order in bulk quantities, at special prices, and distribute them during your own programs. For further information on Sparky's Fire Department and how it can be helpful to you, write to Sparky's Fire Department, Boston 1, Mass.

Sparky and Sparky's Fire Department are a year-around project, completely non-profit, part of the Fire Prevention campaign created for the National Fire Protection Association by the volunteer efforts of the Advertising Council.

Special Sparky Promotion Items shown on next page are designed to help you develop all-year interest in Sparky's Fire Prevention Campaign.

New Sparky Promotion Items

Official Sparky Firemen's Raincoat

Color safety yellow — sizes 2 to 16

$3.95 at clothing stores or write to

RAYDEN FASHION WEAR • Hingham, Mass.

PHILADELPHIA SALES OFFICE: 12 South 12th St., Philadelphia 7, Pa.

SEND COUPON FOR YOUR FREE SPARKY OFFICIAL ASH TRAY

(It's the same tray we sell advertisers)

THE OSBORNE COMPANY, NORWOOD PARK, CINCINNATI 12, OHIO

Please send my **Free** SPARKY Ash Tray! I want to see one of the trays you are selling advertisers.

CHIEF_____

TOWN_____

COUNTY_____ STATE_____

WRITE for information about our OFFICIAL SPARKY CALENDARS and SPARKY CAPS!

OFFICIAL SPARKY FIRE HAT

98¢ **Each**

To Fire Departments in lots of 4 dozen or more

$7.20 per dozen

F.O.B. Long Island City, N.Y.

SPARKY'S FIRE DEPT. EMBLEM

Easily applied to shirts, sweaters, jackets, etc.

25¢ **Each**

3 dozen on a card $4.50

F.O.B. Long Island City, N.Y.

FIRE & POLICE MFG. CORP. 24-20 BRIDGE PLAZA So., L. I. CITY 1, N. Y.

Handsome GIFTS AND AWARDS

. . . SPECIALLY DESIGNED FOR FIREMEN

MANY ATTRACTIVE AND USEFUL ITEMS WITH SYMBOLIC "SPARKY" EMBLEM. IDEAL FOR AWARDS OR GIFTS.

Write for FREE CIRCULAR:

Award Incentives, Inc. 200 WILLIAM STREET, NEW YORK 38, N. Y.

Practical First Aid

By Carl W. Irwin, M.D., of Bangor, Maine, Assistant Chief, Fire Service Division, Civil Defense and Public Safety, State of Maine, and Surgeon, Association of Fire Chiefs of Maine. Many readers will remember Dr. Irwin's article on "Occupational Hazards of the Fire Service," first published in the June, July and August, 1953, issues of FIREMEN, and widely reprinted through fire service publications. Copies of this reprint may be obtained from the NFPA Executive Office for 25 cents each.

Introduction: During recent years, there has been a marked tendency to teach first-aid as an elaborate, complicated subject, requiring many hours of lecture and drill. During these years, the true purpose of first aid — and even the meaning of the term — has been lost. First-Aid is not treatment; it is the immediate care of a sick or injured person until professional help can be obtained.

This course has been designed to fulfill the four basic requirements of first-aid. The methods described are simple, practical, useful, and harmless. All that the first-aider can or should use can be learned in about two hours. The instructor may demonstrate such things as artificial respiration and bandaging, but is cautioned not to elaborate beyond the material actually presented. This is not a medical course: it is a course in First-Aid.

General Information

MUCH of the work of a first-aider can be included under the heading of "General Emergency Care." Most important, the first-aider must be in command of himself and the situation. If he is too excited, it is not possible for him to think clearly about the problem. More important, other people will pay no attention to the instructions of an obviously-excited and confused person.

The first-aider is not expected to make an exact diagnosis. His job is to get the patient to professional medical care in as good condition as possible. Many times, the less that is done to a patient, the better his condition later. Overly-enthusiastic, "so-called" first-aid may be very harmful to the patient; if there is nothing useful to be done, be sure that nothing harmful is done.

The patient should be moved as little as possible at the scene of the incident. If he must be moved, there must be adequate help under the command of one person. The patient should be observed immediately for those things that threaten his life and can be helped by first-aid. Specifically, bleeding and trouble in breathing must be cared for. The patient must be kept lying down at all times until he reaches medical care. He should be given nothing by mouth — not even water. No drugs should be given. Clothing should not be removed unless there is a good reason for doing so. The patient should be kept warm; but external heat, as by use of hot water bottles, is not usually helpful. He should not be moved until a suitable vehicle is available. Even then, he need not be "rushed" to a hospital or physician. Quiet, gentle handling is far more important than speed.

First-Aid Supplies

The well-equipped first-aid kit is a simple one, containing only two, or at most three types of supplies. Most important is an adequate number of sterile gauze squares. These are available in sealed envelopes. The number carried depends on the type of emergency anticipated by the first-aider. Usually, about twelve squares should be included. Under disaster situations, tremendous numbers will be required and will not be available, hence any clean cloth may be substituted.

Roller bandages are used to hold these compresses in place. They need not be sterile. The two or three-inch width is most useful; the one-inch width is inefficient, and the wider bandages are awkward to use. If desired, a roll of adhesive tape may be included.

There are no useful drugs or chemicals for use by the non-professional first-aider, and none should be included in a first-aid kit.

Injuries of Skin

There are three problems in injuries of the skin: pain, infection, and bleeding. There is little that the first-aider can do to relieve pain; he can not use effective drugs, and the milder drugs such as aspirin are just a waste of effort. The problem of infection is much less important than it was even a few years ago, because of drugs which are available to the physician. However, every effort should be made to keep wounds as clean as possible.

They should not be washed by the first-aider, and none of the "antiseptics" should be used on or in wounds. Any clean cloth may be used to cover wounds to keep out additional germs. Ideally, sterile gauze should be placed directly over the wound. The dressing may be held in place by adhesive, strips of cloth, or gauze bandage. The use of triangular bandages is not advised. These bandages are not generally available, and can not be improvised as easily as strips of gauze or cloth. The roller type of bandage can be applied easily; and though it may not appear neat and "professional," an effective dressing can be

applied to any part of the body without excessive prior training.

Bleeding from the skin or scalp can be controlled by pressure applied to the bleeding area. The first-aider is not advised to use tourniquets or ineffective "pressure points." Direct pressure is simple and effective. At first, pressure should be applied over the dressing by use of the first-aider's fingers. Then, a snug dressing is usually quite effective.

Burns of the skin, whether caused by fire, hot liquids, or electricity, are painful and may become infected. A clean cloth should be placed over the burned surface, soaked in clean water, and bandaged snugly in place.

Injuries of Bones and Joints

Two things can happen to the bones of the body: They can be broken or the joints may slip out of place. The need for immediate care is the same in either case. Sometimes the bone injury is quite obvious because of deformity of an arm or leg. However, every patient who complains of pain in an arm or leg after injury must be treated as though the bones were broken. Immediate care of these patients is simple, and must be kept simple.

If there is an open wound, it should be covered as in any other skin injury. If possible, the arm or leg should be left in the position in which the patient is found. No effort should be made to correct the deformity. It is not necessary to apply elaborate splints, and no splinting is advised for the arms.

The patient should be transported lying down, with the arm in the position most comfortable for him. For injuries to the bones of the legs, the most effective method is to tie the to legs together, with a pad of clothing between them. If both legs are broken, they may be supported by the use of a pillow or newspaper wrapped around the injured part, and tied into place by strips of cloth.

Respiratory (Breathing) Problems

Breathing problems may be the result of trouble at any one of three places: the passages leading to the lungs, the lungs, or the breathing center in the brain.

If there is difficulty in breathing, open the patient's mouth to make sure there is no dirt or vomit to interfere with the passage of air. The tongue should be grabbed with the fingers and pulled forward. The patient should then be turned on his side; then, if he vomits, the material will run from the mouth. If the trouble is in the lungs, or the deep passages leading to the lungs, there is little that can be done except to keep the patient quiet and on his side. This is true of lungs that have been bruised or punctured, or irritated by smoke, fumes, or gases.

If there is an open wound of the chest, it should be covered with a bandage. In poisoning, hanging, electric shock, drowning, or suffocation the breathing center is damaged. If there is no apparent effort to breathe, artificial respiration should be given until the patient begins to breathe or is pronounced dead by a physician. There is nothing complicated about artificial respiration. The easiest method to learn is the Schafer Technique. Turn the patient onto his stomach, making certain that there is no obstruction at the mouth. Straddle the patient and feel for the lowest ribs. Place the heels of your palms there, push forward and down while you count "one-two-three" slowly. Then take your hands off while you count "four-five." Then push again. Keep repeating these actions. (*For a discussion of the recently adopted Holger-Nielsen method and eight other first aid measures, see "Methods of Artificial Respiration," a 50-cent reprint from the October, November and December, 1952, issues* of NFPA FIREMEN — *Ed.*)

Internal Injuries

The term, "internal injury," is usually applied to an injury of the abdomen. Except for the first-aid handling described above for every accident, there is nothing to be done for these patients.

Injuries of the Nervous System

Injuries of the head and back are among the most dramatic problems faced by first-aiders. The patient with a head injury has only one symtom that requires specific care from a first-aid standpoint: obstruction of breathing by either blood or vomit. Regardless of the severity of the injury, and whether he is unconscious or not, he should be kept lying on one side. Of course, bleeding from the scalp can be controlled by direct pressure. If the patient complains of pain in the neck or back, or if he has been forcibly "doubled up" in an accident, he must be treated as though his neck or back is broken. If possible, he should be left at the scene of the accident until a physician orders him moved. If this is not possible, he must be moved with full support for his back and head. This means that there must be enough persons to lift the patient to a firm stretcher or other firm surface. He should not be moved again until examined by a physician.

Many people have epileptic fits, or seizures. The first-aider can do only one thing: keep the patient from hurting himself. Any soft object can be placed between the teeth of the patient to keep him from biting his tongue. Do not try to hold the patient down; simply protect him from injuring himself on nearby dangerous objects. In most cases, the seizure will stop in a short time.

Transportation

Transportation is one of the most important phases of first aid. Elaborate drills for handling patients rarely are used practically. Actually, transportation involves only a few simple rules:

1. Have adequate help before starting to move a patient.
2. Select a leader to give instructions while moving patient.
3. Don't rush.
4. Move all parts of the patient at the same time: Support the entire body, both arms, both legs, and the head.
5. Do not bend the body, arms, or legs to get him into the wrong kind of vehicle. Wait for an ambulance, station wagon, or truck.
6. Keep the patient lying down. If he is vomiting or bleeding from the mouth, keep him lying on his side.

Summary

First-aid is a matter of common sense. If the first-aider can control the tendency of himself and others to panic, he will probably be able to handle any first-aid problem. If he can resist the temptation to do useless things, he will probably also keep from doing things that are actually harmful to the patient. He must realize his limitations. He is not expected to make a medical diagnosis, nor give treatment. His job is first-aid, the immediate care of a sick or injured person until professional help can be obtained.

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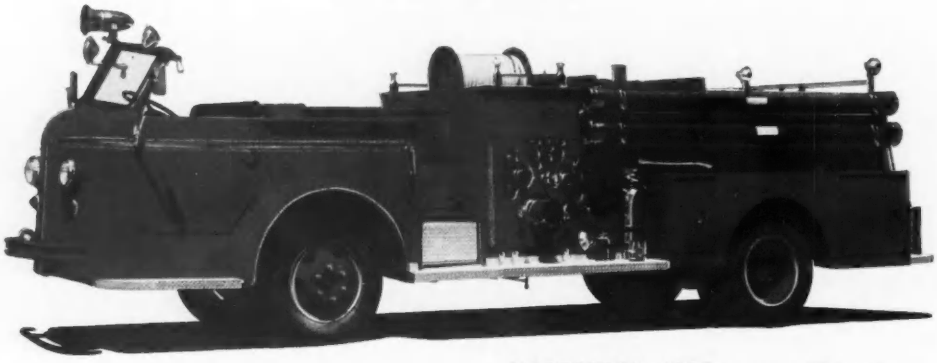
·RANGER·
500 G. P. M. PUMPER

·CRUSADER·
750 G. P. M. PUMPER

·PROTECTOR·
1000 G. P. M. PUMPER



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Built for long service life . . .
Guaranteed by AMERICAN LaFRANCE

From the front bumper to rear step – it's an all-new fire engine – a fireman's fire engine – with the best features of American LaFrance cab-ahead-of engine models, plus some new features. It's fast on acceleration with ample power for reserve pump capacity. There are two sizes of Continental engines, 170 b. h. p. and 200 b. h. p. available for 500 g. p. m. or 750 g. p. m. pumpers. The 1000 g. p. m. pumper is powered with a 200 b. h. p. engine.

For safety in operation and smoothness of ride these new fire engines are unequalled: no bounce – no roll – no chop. Maximum of visibility for the driver; short turning radius and easy steering. Full 5 man seating with 4 inches adjustment on driver's seat. The chassis frame is rugged pressed steel with deep section (10 3-8") for maximum service life. Designed and produced expressly for fire service use, backed by the American LaFrance 5 year warranty with service available from American LaFrance for the entire operating life.

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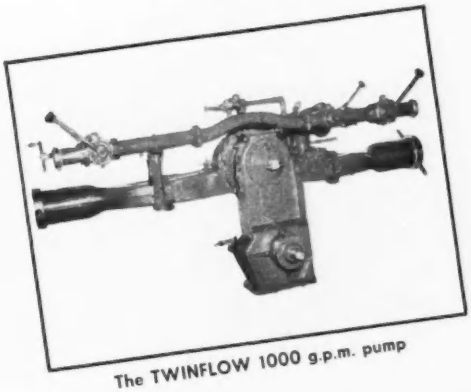
PUMPERS FOR *1956* . . .

Advanced Fire Fighting Features:

• NEW TWINFLOW PUMP •



The TWINFLOW 1000 g.p.m. pump

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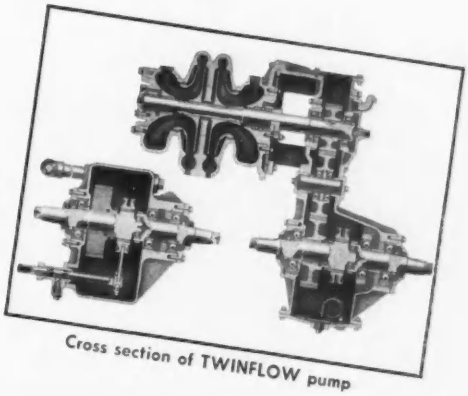
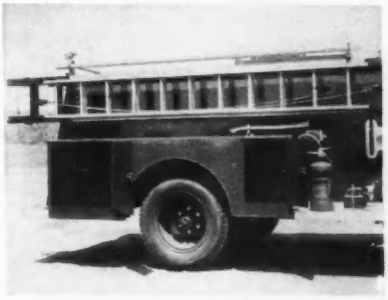


Cross section of TWINFLOW pump

A completely new series of TWINFLOW pumps provides outstanding performance with a maximum of reliability. The pumps are centrifugal, parallel series, two stage with operating controls on left side of the body.

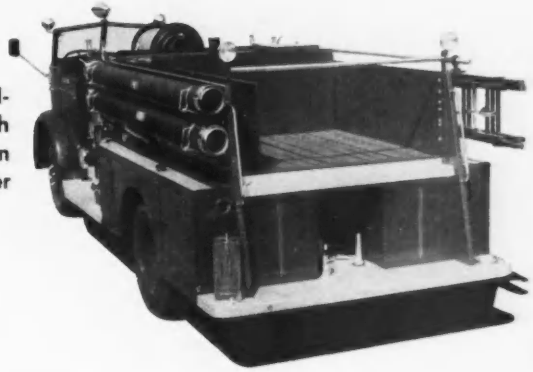


ENCLOSED COMPARTMENTS

Enclosed equipment compartments are an outstanding feature. Three are standard with four more available at a slight cost for a total of seven. Big enough for portable pump, portable generator, inhalators, gas masks and radio.

LARGE CAPACITY HOSE BODY

The large hose body is heavy gauge stretcher leveled steel with capacity for 1500 feet of 2½ inch hose and 400 feet of 1½ inch hose. A 300 gallon water tank is standard with larger capacity water tanks optional.



Visit Booth 62 and see this new fire engine in Space A at the I.A.F.C. Conference in Omaha, Nebraska.

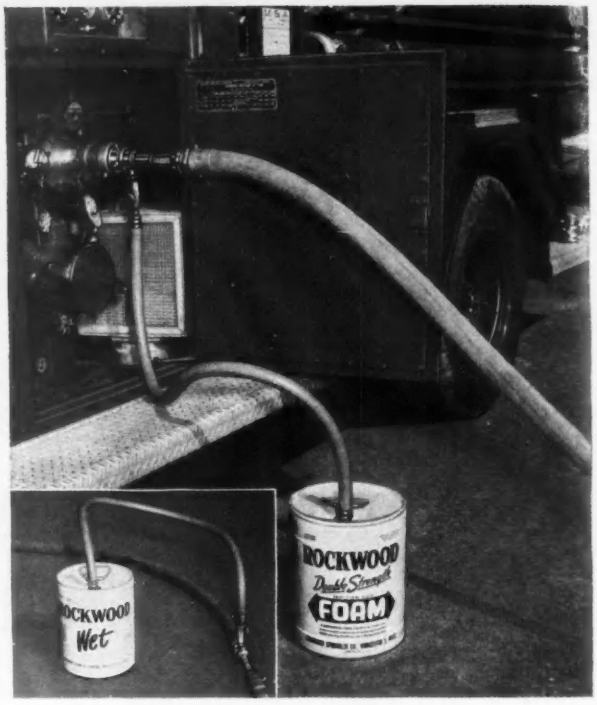
AMERICAN LA FRANCE CORPORATION

ELMIRA, NEW YORK, U. S. A.

LA FRANCE FIRE ENGINE AND FOAMITE LIMITED

TORONTO, 9, ONTARIO, CANADA

ROCKWOOD
built-in proportioning systems for municipal fire trucks



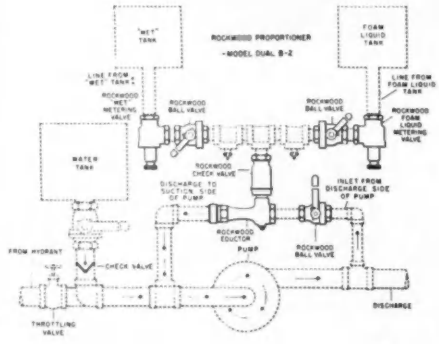
Rockwood's long, practical experience and constant research assures you the safest, most economical means of fighting all types of fires. These pages illustrate a few of Rockwood's family of products that are playing a vital part in fire fighting programs throughout America.

Rockwood's new Double Strength FOAM and Rockwood WET offer you many advantages

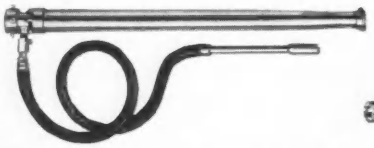
Double Strength FOAM has double foam-making capacity, cutting in half the transportation cost and storage space. It is faster spreading and flows freely — even at subzero temperatures. An outstanding FOAM liquid to go with Rockwood's advanced type of FogFOAM and FOAM Nozzle for quickly putting out fires in gasoline and other similar flammable liquids. Available in 5 gallon cans or 50 gallon drums.

Rockwood WET increases the spread and penetration of water into deep seated fires involving ordinary combustibles such as wood, paper, cloth, etc. It greatly reduces the water needed to extinguish such fires. Available in 50 gallon drums, 5 gallon and 1 gallon cans.

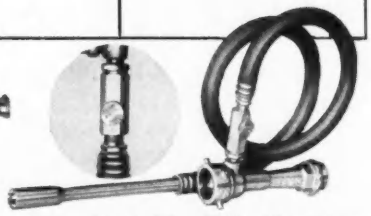
Regular FOAM and All Purpose FOAM are also available.



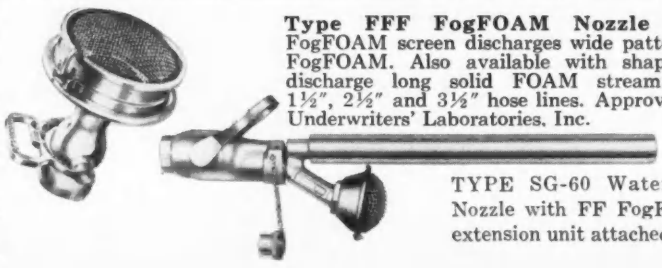
Proportioning System. Model B-2, around-the-pump proportioner. Used when pressure is maintained by pump. Custom-engineered systems are also available.



The F-501 Nozzle developed for use with 1½" hose to provide an economical means of applying a solid stream of FOAM on flammable liquid fires.



The Variable FW Metering-Check Valve with FW Eductor incorporates both the Metering Valve and Ball Check Valve in one unit and meters material into the hose line in any proportion from 1% through 6%.



Type FFF FogFOAM Nozzle with FogFOAM screen discharges wide pattern of FogFOAM. Also available with shaper to discharge long solid FOAM stream. For 1½", 2½" and 3½" hose lines. Approved by Underwriters' Laboratories, Inc.

TYPE SG-60 WaterFOG Nozzle with FF FogFOAM extension unit attached

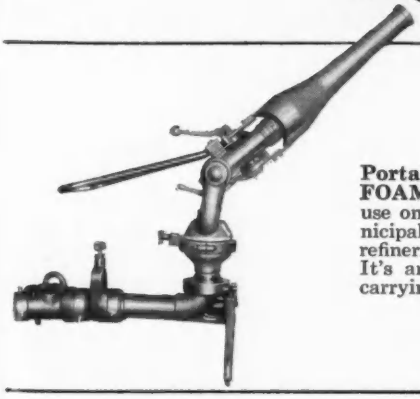
Rockwood offers you 4 types of turret control

...and any Rockwood turret gives you 4 types of discharge (1) FogFOAM, (2) Solid FOAM stream, (3) WaterFOG,(4) Solid water stream

Remote Hydraulic Control Single Type FFF FogFOAM Turret Nozzle on Type 0-10 U. S. Air Force crash rescue fire fighting truck. Similar turrets can be supplied for oil refineries, chemical and industrial plants and municipalities. Hydraulically operated dual turrets also available.

Remote Manual Control Type FFF FogFOAM Turret Nozzle provides efficient operation of turret from driver's seat within truck cab — for small municipalities, airports or industrial properties where limited personnel is available.

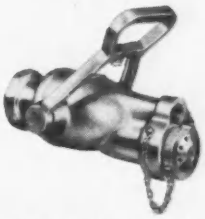
Direct Manual Control Dual Type FFF FogFOAM Turret Nozzles — can be operated directly by firemen from cab roof.



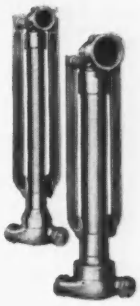
Portable Type FFF FogFOAM Turret Nozzle for use on fire hose lines by municipal fire departments, oil refineries and industrial plants. It's arranged for convenient carrying on fire trucks.

ROCKWOOD

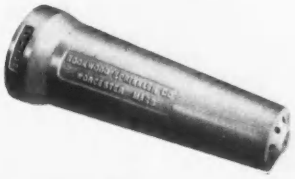
WaterFOG Equipment



Type SG-48 WaterFOG Nozzle. Easy to handle. Discharges high or low velocity WaterFOG or straight water stream.



Lightweight Rotating Cellar and Attic Pipe. Fights fires in cellars, attics, under piers, bridges, etc. Also available in a short unit with swivel but without extension barrel.



Type N22 WaterFOG Nozzle. Discharges high velocity WaterFOG. For general use around live electrical equipment.

Type N23 WaterFOG Nozzle with Swivel Handles. Discharges high velocity WaterFOG with higher discharge and greater range than Type N22 Nozzle.

ROCKWOOD SPRINKLER COMPANY

Engineers Water . . . to Cut Fire Losses

PORTABLE FIRE PROTECTION DIVISION

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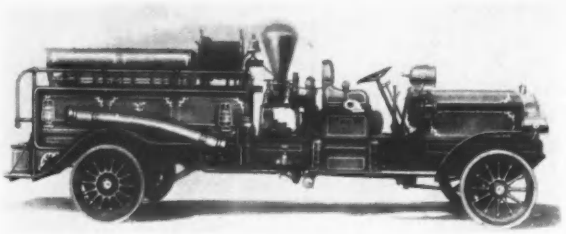
Distributors in all principal cities



This is the first Mack pumper which was produced in 1911. Note the chain drive, large booster reel, chemical tanks and right-hand drive mechanism.

Highlights in the Growth of *MACK* *Manufacturing Corporation*

This modern 750 gpm triple combination Mack pumper was recently delivered to the Malvern Volunteer Fire Company of Malvern, Pa.

Another in the series of articles on the foremost manufacturers of fire apparatus and equipment. For previous articles in this series refer to the March and September, 1954, issues of FIREMEN *magazine.*

ALTHOUGH primarily concerned with the building of commercial motor trucks and buses for general public and industrial use, the Mack Manufacturing Corporation, with its main plant in Allentown, Pennsylvania, for 46 years has been a major producer of motor fire apparatus. In 1911 the company built the first of a long line of motor pumping engines, and actual production of motor fire apparatus dates back to 1909.

Generally speaking, today there are three kinds of fire apparatus production — manufacturing of both chassis and fire equipment; construction of special fire chassis to which purchased fire equipment is added and manufacture of fire equipment which may be applied to commercial truck chassis. The production of Mack fire apparatus is a combination of the first two classifications, since the firm builds the chassis and much of the special fire equipment. Engineers of the firm feel that through integration of fire chassis production with the larger volume production of commercial vehicles better products, faster production and lower manufacturing costs are afforded.

The Corporation claims to have pioneered 18 major developments in motor fire apparatus, including the following:

First long-wheel-based, motor-propelled city service hook and ladder truck (1910); first left-hand steered fire engine (1915); four-wheel brakes (1927); power brakes (1927); series-parallel, pressure-volume centrifugal pump (1927); engine-driven aerial ladder hoist (1928); large-capacity (2,000-gal.) water-carrying, triple-combination pumping engine (1935); six-wheeled fire chassis (1935); fully-inclosed (sedan type) fire apparatus (1936); self-contained aerial ladder truck, rescue truck and high-pressure hose combination (1939); high-pressure, water-carrying, fog-type crash truck (1943); also heat-exchanger for cooling pumper engines; gasoline, oil and air filters; thermostatic temperature control; radiator shutters; electric engine pre-heater; and low chassis suspension.

Sometimes unappreciated is the fact that ample improvement of fire apparatus design often entails costly production changes to manufacturers. For example, the shift of the driver's position from the right-hand to the left-hand side pioneered in 1915 involved more than merely moving the steering controls from one side to the other.

Clutch and brake controls had to be completely reversed. The gearshift and hand-brake levers had to be moved from the side to the center. This involved extensive changes in the transmission.

Engines for right-side control required most of accessories, even the valves and manifolds, to be placed on the left side, out of the way of the steering gear. When the change was made, the engine had to be redesigned to clear up the left side for the same reason, placing the valves and manifolds on the right side. This constituted an elaborate and far-reaching redesign of the engine. Brake rigging, piping for the exhaust, placement of instruments and minor controls and numerous other changes had to be made.

STARTING in a wagon shop on Atlantic Avenue in Brooklyn, N. Y., the five Mack brothers began production at the turn of the century. Their first sale was a bus, delivered to Harris & McGuire in 1900. For

(*Continued on page 54*)

Oil Extraction Plants

LATEST in the series of Occupancy Fire Records published by the NFPA Fire Record Department is FR 55–6, "Oil Extraction Plants." This is a summary of fire experience in various plants which specialize in solvent extraction, expeller extraction, and raw and finished products storage and handling. In addition to reporting the causes the report also lists fire protection deficiencies, contents and construction factors which contributes to fire plant loss in these occupancies. The 12-page, illustrated, 8½ by 11-in. pamphlet also lists a number of typical NFPA Fire Protection Standards whose recommendations are applicable to oil extraction plants.

Copies of the new report may be obtained for fifty cents each from the NFPA Publications Department at 60 Batterymarch Street, Boston 10, Massachusetts, with generous discounts allowed for quantity purchases. Ask for "FR 55–6."

Maryland Training

THE Fire Service Extension of the University of Maryland, headed by Director Robert C. Byrus, has published an attractive 16-page booklet describing the courses conducted for firemen. Persons desiring information of this fire service training program, should write to Director Bryus, c/o Fire Service Extension, Box 85, College Park, Maryland.

A new addition to the staff of the Fire Service Extension is Robert J. Smith, who now fills the position of senior instructor. He has been an active fireman with the West Lanham Hills Volunteer Fire Department, has been Chairman of the Firemen's Training Committee of the Maryland State Firemen's Association and has also served on other committees. He has taught firemanship courses in the University of Maryland program since 1947.

- FOR SALE -

Hook and Ladder Truck

Good Condition

Write to:
Wallace Crawford, Sec'y.
East End Vol. Fire Co., Inc.
East Farmingdale, N. Y.

YESTERDAY...

Fires Were Fought by DEFENSE

1931... Firemen are shown battling a four-alarm fire of possible incendiary origin which destroyed a cooperage plant and warehouse in California early today, doing an estimated $100,000 damage and injuring two firemen. Great clouds of smoke and flame from the fiercely burning structure covered a quarter of a block. (Int. News Photo)

TODAY...

IT'S FIRE ATTACK!

Scott Air-Paks

ARE *FIRE ATTACK* EQUIPMENT!

YOURS IS A **FIRE ATTACK** DEPARTMENT IF YOU HAVE SCOTT AIR-PAKS ON EVERY FIRE TRUCK

As early as 1948 the editor of Fire Engineering urged more concentration on *FIRE ATTACK* and less on FIRE DEFENSE. ". . . Lack of respiratory protective equipment . . . has not only been responsible for slowing up *FIRE ATTACK* but has resulted in the incapacitation of too many good firefighters."

Today SCOTT AIR-PAKS get men in fast for efficient *FIRE ATTACK* with complete breathing safety! Result, more lives saved and fire losses reduced to a minimum. Take steps NOW to make yours a *FIRE ATTACK* department. Write for complete information.

SINCE 1932 Scott FIRE SAFETY—FOR SERVICE!

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

236 ERIE STREET **LANCASTER, N. Y.**

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, N. Y.

THE New FALCON AUTOMATIC FIRE DETECTOR

Here is fool proof fire detection that guards night and day against the hidden sneak attack of fire. These detectors "scream out" a 10 minute 95 decibel warning. Approved for 20 ft. spacing.

- LOW COST
- COMPLETELY AUTOMATIC
- EASILY INSTALLED
- GUARANTEED FOR LIFE
- U. L. APPROVED

Write today for full details

FALCON ALARM CO. INC.
Subsidiary of Fyr-Larm Co., Inc.
243 Broad Street, Summit, N. J.

This TECHNICAL INDEX is one reason why you need this 28-page volume—it's the University TECHNILOG

The new 1955 compilation of valuable information that explains and simplifies the application of loudspeakers. A real time and money saver for dealers, contractors, service men and installation designers. The most authoritative single piece of literature ever published on loudspeakers. It's yours FREE.

Not just a catalog!

Includes both technical and product data in factual, concise form with dozens of helpful explanatory photographs, charts and tables. Features much engineering information available NOWHERE ELSE!

TECHNICAL INDEX

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Methods of Connecting Speakers to the Amplifier	8
Impedance Matching	9
Constant Voltage Distribution System	12
Impedance Matching Transformers	16
Effects of Mismatch Upon Power Transfer	16
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Address requests to Desk 10

University UNIVERSITY LOUDSPEAKERS · INC.
80 SO. KENSICO AVE., WHITE PLAINS, NEW YORK

WE REGRET to announce that Mark H. Brosier, Supervisor, Firemanship Training, College, passed away August 3 at the age of 58.

During his many years of fire service activities he served for 25 years on the Anderson, Indiana, Fire Department where he rose through all grades to Assistant Chief in charge of the Fire Prevention Bureau. In 1948 he retired from the Fire Department and joined the Iowa State College Firemanship Training Staff as an instructor. In 1951 he was appointed Supervisor of Firemanship Training at the College.

He was very active in many fire prevention and fire training organizations, including the NFPA Committee on Firemen's Training, of which he was a member. He also worked with the Exploratory Committee on Application of Water, and was a regular participant at meetings of the International Association of Fire Chiefs, the Fire Department Instructors Conference in Memphis, Tennessee, and many other fire service activities.

He is survived by Mrs. Brosier, one son and two daughters.

New Chief in Tokyo

NEW Chief of the Tokyo, Japan, Metropolitan Fire Board is Nobuo Shinoda, who served as Deputy Chief of that organization for many years. He succeeds Chief Susumu Kanehara who retired on June 6 after thirty years of service. The Fire Board, which provides fire department protection for Tokyo, has retained membership in NFPA since 1951. Latest reports stated that personnel in the Fire Board included the Chief, 6 division chiefs, 61 chief inspectors, 143 inspectors, 629 assistant inspectors, 1,263 sergeants and 5,123 firemen, assisted by some 397 civilian employees.

New Truck for Davenport

The Davenport, Iowa, Fire Department recently acquired this 1,000 gpm pumper mounted on an International R-306 chassis, powered by a 266 HP engine. It has a 300-gallon booster tank, a booster reel with 200 ft. of 1-in. hose at the rear of the truck, and carries 30 ft. of 3-section aluminum extension ladder, a 12-foot roof ladder and other equipment.

Liquefied Petroleum Gas

(*Continued from page 29*)

Revisions were made to permit the use of small ICC containers inside of buildings. This authorizes the use of so-called self-contained hand torches that have been listed by Underwriters' Laboratories, Inc.

Another section was revised to prohibit the use of container valves and accessories made of cast iron. However, provision was also made for the use of suitable malleable or nodular iron for these devices.

Another change was made to prohibit the use of cast iron fittings and to clarify where equipment made of proper malleable, nodular or higher strength gray iron would be acceptable.

Paragraphs B. 9 (b) and (c) were revised to permit an increased setting at the maximum start to discharge pressure of relief devices.

Paragraph 2.3(c) was revised to include all underground containers rather than containers of 200 gallons capacity or less.

Paragraph 4.2(b) was revised to include all ICC containers authorized for LP gas service having a minimum service pressure of 240 psig.

The new standard now recognizes an automatic shut-off device on a small stationary engine in lieu of venting outside the building; permits LP gas container to remain on public utility service vehicles when stored in private garages; permits broader use of so-called self contained application of small ICC containers; and permits the use of copper and brass pipe or tubing in LP gas service station piping.

NFPA Standard No. 58 is published in Vol. 1 of the National Fire Codes and in separate pamphlet form. It is available from the NFPA Publications Department, 60 Batterymarch St., Boston 10, Mass.

Fire Departments in Southern States!

Plan to attend the

NFPA Regional Meeting

Jung Hotel
New Orleans, Louisiana

November 28–30, 1955

Your Choice of an Engine-Generator
IS IMPORTANT

That's why — before you buy *any* engine-generator *you should examine* the models developed by United States Motors Corporation especially for fire fighting, safety and utility.

Each unit rests firmly on a foundation of over 65 years of engineering and manufacturing experience and world-wide installations in fire-fighting equipment.

Fast-starting dependability . . rugged, light-weight construction, complete simplicity — yet wide adaptability as a source of power for lights, electric saws, drills, suction fans, acetelyene cutting and other fire-fighting requirements where dependability is *essential.*

For that "little extra" that can mean "so much," U. S. Units carry a generous "overload capacity."

Check U. S. Motors before buying *any* engine-generators. U. S. builds complete line from 200 watts to 250 KW stationary, mobile or portable, gas, gasoline or diesel fuel Write for complete details.

Typical light weight, compact 2500 Watt Unit. 300 Models to choose from.

United States Motors Corporation
424 Nebraska Street Oshkosh, Wis.

When You Want
The Best...
be sure to
SPECIFY
and GET

HANNAY
REG. U.S. PAT. OFF.
HOSE REELS
CLIFFORD B. HANNAY & SON, INC.
WESTERLO, NEW YORK

FREE!

New 16-page illustrated catalog of complete line of Hannay Fire Hose Reels, including a new reel not previously announced. Write for your free copy today.

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CLIFFORD B. HANNAY & SON, Inc.

615 Main St., Westerlo, N. Y.

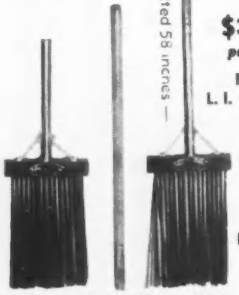
This is it! "THE KING"
FIRE FIGHTING BROOM
This is a piece of equipment, not just another broom.
Send check or money order in the amount of $3.50 for sample, and convince yourself. You will never buy any other broom. It has many uses. Money refunded within ten days if not satisfied with sample.

Mr. Official:
Save wear and tear on expensive, heavy equipment! Put "THE KING" fire fighting broom on all cars and fire trucks! It's inexpensive, easy to carry and built for quick attack on grass and brush fires.

— actual length when connected 58 inches —

Steel Bristles Cannot Burn!

Special Price Cities, Towns, or Villages
$34.00
per dozen
F. O. B.
L. I. City, N. Y.



PAT. PENDING

FIRE & POLICE MFG. Corp.
24-20 BRIDGE PLAZA SO., LONG ISLAND CITY 1, N. Y.

College Level Fire Administration Program

THE School of General Studies, Queens College, Flushing, New York, has announced a professional program in Fire Administration for firemen. Classes will start in the fall semester of 1955. The courses scheduled are arranged to permit New York City firemen to attend classes at times compatible with their duties under that fire department's two-platoon system. Fire fighters may attend one of two identical sessions, held from 2:00 P.M. to 3:50 P.M. in the afternoon, and from 8:40 P.M. to 10:30 P.M. in the evening.

Tuition fee for each course amounts to $14.00 for members of the New York City Fire Department and $20.00 for all other fire fighters. Each student is also required to pay a registration fee of $2.00 and a library service fee of $1.00.

Courses to be offered in the coming semester include "Municipal Management E10, Fundamentals of Fire Administration I." This is a basic course in fire administration intended for fire fighters interested in securing advancement to officer ranks. Among the topics to be covered are: role of the fire service in the community and its place in the municipal government organization: organization of the fire department; building and fire codes; underwriters standards; pertinent laws and ordinances; budgeting and planning; personnel regulations, duties and assignments; training of personnel; alarm and communication systems; problems of water supply; and fire education and prevention.

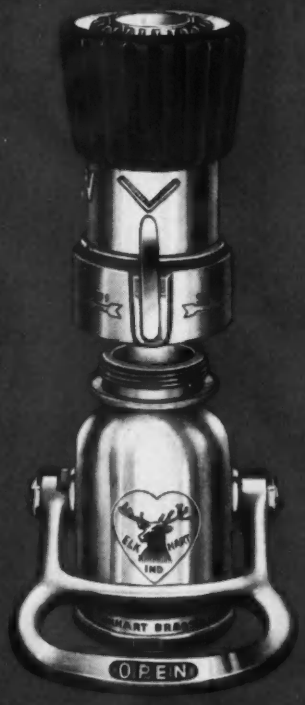
"Municipal Management E12. Fire Company Administration." This is a practical course covering the essentials of fire company administration. Topics to be covered include: personnel training, placement, rating and counseling; work organization; care and maintenance of apparatus and buildings; reports, records, supply problems; authority and responsibility of the company officer; school and public relations, fire prevention responsibilities in the community.

"Municipal Management E14. Hydraulics for Firemen." This is an intensive course for professional firemen on the application of basic principles of hydraulics to fire-fighting. Among the topics to be considered are: physical properties of water, measurement of pressure, velocity and reach of fire streams, discharge, friction loss, flow, relay problems, drafting water, and the design, maintenance, and use of pumps and pumping systems. The necessary mathematics for the solution of the problems will be taught in conjunction with the subject matter.

Other courses planned for the spring semester of 1956 include "Municipal Management E13, Legal Aspects of Fire Prevention." This will feature a study of laws and regulations pertaining to the fire service and to fire personnel; pertinent laws, ordinances, and codes and the responsibility and powers of the fire service in enforcement; the legal status of the fireman, his rights, duties, liabilities, his status as a member of the Civil Service. The course will include a study and clarification of the legal terminology necessary for interpretation of pertinent laws and decisions. Also scheduled for the spring semester is Municipal Management E11 which will be the same basic course offered in the fall semester class E10.

FIRE fighters in the vicinity of New York who wish further information, or who wish to apply for these classes should write to the School of General Studies, Queens College, Flushing 67, New York, stating the name of their fire department.

The Advisory Committee for this Fire Administration program includes Percy Bugbee, General Manager, National Fire Protection Association; William E. Clark, Captain's Representative, Uniformed Fire Officers' Association; George W. Clough, Fire Marshal, Nassau County Fire Commission; John D. Gerletti, former General Manager, International Association of Fire Chiefs; Solomon Hoberman, Director, Bureau of Training, Department of Personnel, Civil Service Commission, City of New York; Chief Edward J. MacDonald, White Plains Fire Department; Fred Shepperd, Editor, Fire Engineering; and Deputy Chief, James T. Ward, New York City Fire Department.



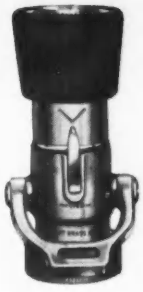
now... you can shut off nozzle...remove tip...add hose... re-attach tip with ELKHART'S "ST" SERIES SELECT-O-STREAM MYSTERY NOZZLE

INCREASED CAPACITY: 100 lbs. nozzle pressure—30° fog—1½" discharges 125 G.P.M.—2½" discharges 275 G.P.M. (No change 1" size).

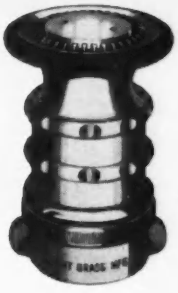
LARGE WATERWAY: Ball shut-off with full 1½" waterway—reduces friction loss—increases operating efficiency.

EXCLUSIVE: Embossed braille-type symbols for pre-selection of stream.

ADAPTABILITY: Detachable shut-off allows shutting down line, without disturbing hydrant or pumper, removing tip—adding an extra length of hose—attaching SOS tip.



SELECT-O-STREAM with integral shut-off
1" S-200 S.O.S.
1½" L-200 S.O.S.
2½" 200 S.O.S.



J-200—Proven dependability in field tests and under actual fire conditions—500 G.P.M. capacity—for use on hand lines—portable deluge sets—ladder pipes.

JN-200—Completes the full line of Mystery Nozzles—Delivers 1500 G.P.M.—at 30° setting 100 lb. nozzle pressure, widely used as a Master Stream Nozzle.

ELKHART gives you the complete Mystery Nozzle line

There is no substitute for quality and dependability

ELKHART BRASS MFG. CO., INC.
ELKHART, INDIANA
Fire Fighting Progress . Since 1902

MIDWESTERN

Safety Clothing for FIREMEN

The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an *original* MIDWESTERN development . . . featuring highly visible yellow stripes which are *rubberized as part of the material* . . . not painted, glued or sewed on!

Service records prove that Midwestern Striped Safety Coats withstand years of rugged duty . . . offer high safety visibility during the entire life of the garment. There are many imitations but *no substitute* for the workmanship, built-in comfort and longer wear you receive by specifying MIDWESTERN.

MIDWESTERN LEADS IN QUALITY

Superior quality, advanced design, exclusive fabric materials and safety features have made Midwestern a leader in the field of firemen's safety clothing. For complete information on our full line, see your Midwestern dealer. A letter to the factory will also bring you literature and material samples for your inspection.

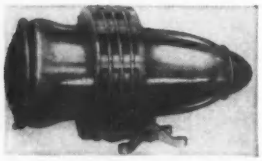
MIDWESTERN SAFETY MFG. CO. Mackinaw, Illinois

Manufacturers of the Famous **MACKINAW Safety Coats**

SIRENO (TRADE MARK)

NEW "REVOLVO-RAY"

Sweeps in complete circle giving greatest protection to men and vehicles.



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THE LARGEST, MOST POWERFUL SIREN

Other Styles and Sizes for Every Requirement

THE SIRENO CO. INC.

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New York 38, N. Y.

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Present their exclusive FLAT BACK Badge. Struck solid from modern engraved dies.

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NIELSEN-RIONDA, Inc.

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Dealer inquiries invited

Roving Fire Squads

NOW active in the New York City Fire Department are several roving fire squads, which cover sections of the city which have experienced the highest fire incidence. Under orders of Fire Commissioner Edward F. Cavanagh, the first roving squad began operating in the Harlem section on April 16.

Single squads consist of a lieutenant and five or six firemen using a converted hose wagon equipped with gas masks and fire fighting tools. The squads go to all fires in their districts to back up regular first alarm response, remain only if needed, then return to quarters, keeping touch with fire alarm headquarters by radio. The record of one squad recently showed that it had responded to 559 alarms and had given aid 99 times, which served to diminish the need for second alarm responses.

Dates to Remember

Arizona: This Arizona State Fire School will be held at Phoenix Technical School, October 20–22. Write to Director Jake Siken, Battalion Chief, Phoenix Fire Department.

Indiana: The 22nd Annual Indiana State Fire School will be at Purdue University, September 13–16.

Maryland: The 22nd Annual Short Course will be held at the University of Maryland, September 6–9. Write to Robert C. Byrus, Director, Fire Service Extension, University of Maryland, College Park, Maryland.

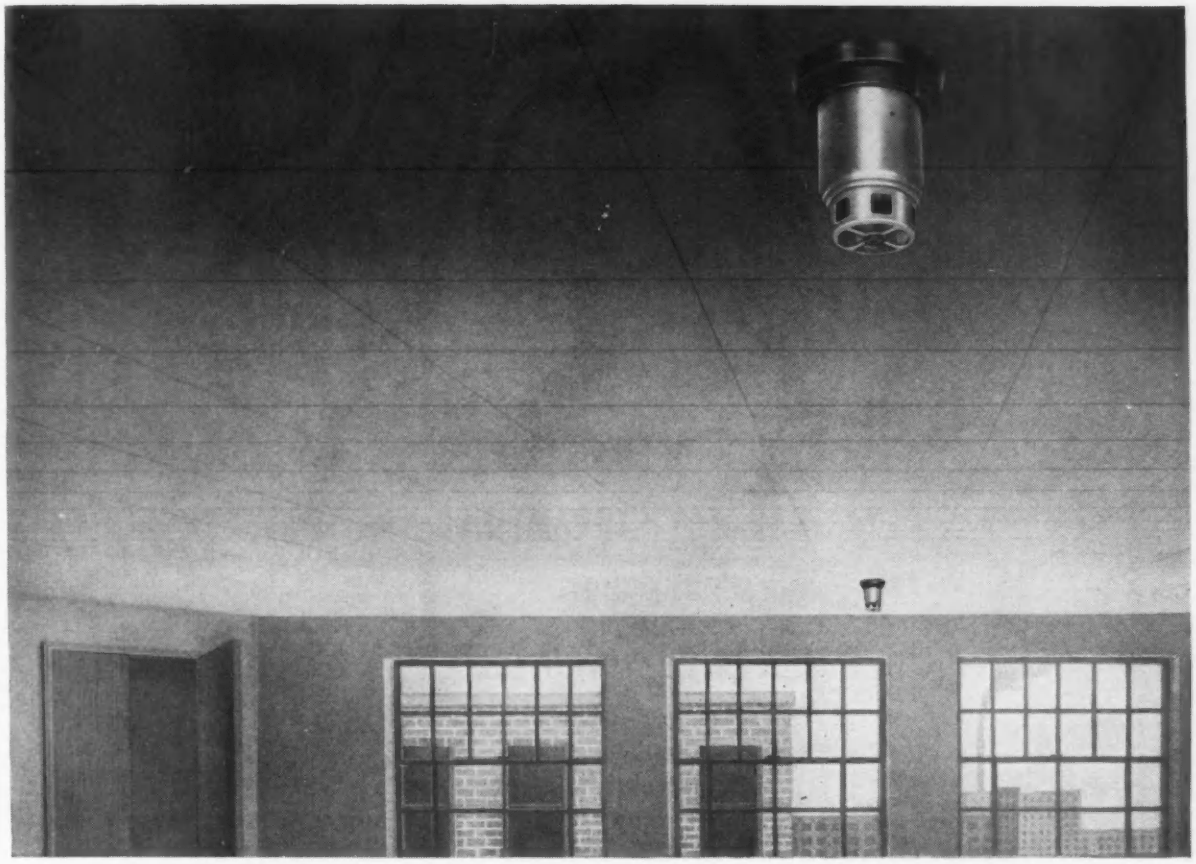
Michigan: Alert Firemens Association's second annual Volunteer Firemen's Fire Training School to be held September 10th & 17th in Lansing. Write to Chief Earl Miller, Gen. Chairman, Lansing Township Fire Department, Lansing, Michigan.

Ohio: The Ohio State Fire School will be held at Columbus, September 12–16. Write to Robert M. Reese, Supervisor, Trade & Industrial Education Service, Department of Education, 220 S. Parsons Ave., Columbus, Ohio.

Pennsylvania: The Pennsylvania State Fire School is now in operation at Lewistown. Courses scheduled for September and October include: Standard Fire Fighting; Advanced Fire Fighting-Annual Fire School Round-Up; Fire Service Instruction Course; Fire Apparatus Operation and Maintenance. Further information may be obtained from Edgar A. Spotz, Advisor, Fire Service Training, Public Service Institute, Lewistown, Pennsylvania.

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area . . . harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire . . . requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

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Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

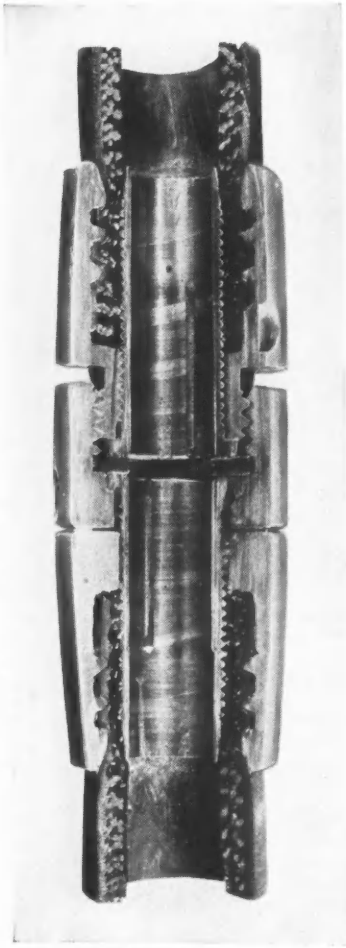
portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

Getting a JUMP on Fire

By "Mike" Rivise

Here are two interesting inventions in the field of fire safety for which patents were granted by the United States Patent Office.



UNRETOUCHED PHOTO

4 REASONS WHY YOU SHOULD SPECIFY BAR-WAY STREAMLINED HIGH PRESSURE HOSE COUPLINGS...

1. **SAFETY**—The coupling becomes the *strongest part of the hose line.* Tested to 3000 pounds pressure and 500 pounds pull.
2. **FULL FLOW**—No suppression of flow in coupling. No shrinkage of hose at coupling.
3. **FLEXIBILITY** — Reels smoother. Easily replaced. Nothing to catch on corners or underbrush.
4. **BETTER MADE**—Accurately machined, always the same, interchangeable. WILL NOT FAIL.

BAR-WAY couplings are growing in favor with firemen, hydraulic engineers and others who insist on the best. Send for our free pamphlet. Gives detailed specifications for all types of pressure hose.

BAR-WAY MFG. CO., STAMFORD, CONN.

IN A short hundred and fifty years America advanced from a group of agricultural colonies to the leading industrial nation of the world. One of the leading factors in this rapid change was the native mechanical ingenuity of its citizens.

But not all inventions were great.

For example, back in 1879, Benjamin B. Oppenheimer of Trenton, Tennessee, patented his "Improvement in Fire-Escapes." Legend has it that his friend Horatio Wotboodle, a traveling salesman, first used it.

Horatio was asleep in his hotel when the fire alarm awoke him. He

"Horatio Wotboodle" may have looked like this when descending from his hotel room, but in any event this contrivance received Patent No. 221,855 on November 18, 1879.

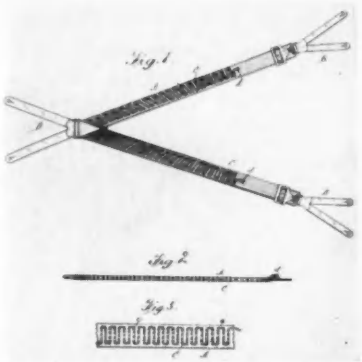
immediately thought of Mr. Oppenheimer's invention.

Wotboodle put on the head piece which contained a self-opening parachute and after donning a pair of overshoes jumped out of the window.

Yes, jumped out of the eighth floor, front. Neither did he have to worry about the parachute not opening for that's what his friend, the inventor, had assured him. His overshoes were heavily soled with pads of suitable thickness to take up the concussion with the ground.

Horatio claimed he bounced into an apple tree in an adjoining orchard. He was not discovered for fifteen hours during which period he subsisted on green apples awaiting his rescue.

Whether this legend is true or fancy, it is a real fact that the inventor received a patent from the United States Patent Office. On



Three views of the "fire escape suspenders" patented by Chief Hale under Patent No. 323,416 on August 4, 1885.

November 18, 1879, about seventy-five years ago, he was granted Patent No. 221,855.

BACK in 1885 George C. Hale, than Kansas City, Missouri, fire chief, was concerned with the hazards of fire in lodging houses. He pondered about this and finally came up with a solution. Why not incorporate a fire escape in suspenders?

Let Fire Chief Hale speak for himself:

"My invention," (he stated in his patent application), "Relates to improvements in suspenders with a cord so secured thereto as to constitute a part of the same, and to be readily and easily detachable therefrom. Whereby in the event of a person being confined to a burning building and having all of the usual means of escape cut off, the cords can be easily disengaged from the suspenders and lowered to the ground to receive a rope and thus enable the person to escape."

All you had to do when you went to bed was to be sure you had your suspenders ready at the foot of the bed. And of course you shouldn't forget to detach them from your trousers before you threw the suspenders out of the window.

●

NFPA No. 19

Specifications for Motor Fire Apparatus

1955 edition

58 pages, 50 cents per copy

Write to

National Fire Protection Association
60 Batterymarch Street
Boston 10, Massachusetts

CAIRNS FIRE HELMETS

AMERICA'S "REGULATION" STANDARDS

The "NEW YORKER"
No. 5A

The "original" leather helmet, introduced by CAIRNS in the early 1800's, and steadily improved through the years since. Its specially-tanned top-grain steer hide and superior design make the "NEW YORKER" the safest, toughest, strongest, most durable helmet on the market.

The "SENATOR"
No. 350

Pressed from one piece of rolled aluminum, with corrugated 4-comb crown and reinforced beaded brim, the "SENATOR" meets the preferences of those seeking a light-weight helmet that is comfortable, safe, strong and durable.

The "CLIFTON"
No. 900

Here are CAIRNS quality and experience embodied in a "plastic" helmet — a replica of the "NEW Yorker" in style, but molded in CAIRNS "Flint-Flex" — hard but not brittle, tough and flexible while still keeping its shape, light in weight, non-conducting, chemical-resistant.

The CAIRNS line also includes other helmets in drop-brim and other styles — in leather, aluminum and "Flint-Flex," and in other weights — all of standard CAIRNS QUALITY. We can supply everything the fireman needs for his personal equipment. Write for catalog 350.

CAIRNS & BRO., Inc. — Allwood, Clifton, N. J.

SINCE 1836

In Fireboats
the Trend is to DIESEL

NEW YORK • PHILADELPHIA • BOSTON
CHICAGO • SEATTLE • HOUSTON
CLEVELAND

are among cities whose fireboats are powered by GM Diesel engines.

GM DIESEL POWERED FIREBOATS have these advantages:

Readiness: GM Diesel engines start at the push of a button—ready for action at a minute's notice without warm-up.

Economy: Eliminates cost of keeping steam boilers fired up round the clock. Switch to GM Diesel on two fireboats saved Boston $42,500 a year over oil-fired pumpers.

Flexible Power: Front power take-offs permit use of full power for either propulsion or pumping. Multiple-engine arrangement provides extreme flexibility and reserve pumping capacity.

Modern Power: Compact, high-speed 2-cycle GM Diesel engines direct connected to high capacity pumps occupy little space. Leave more room for work and living quarters.

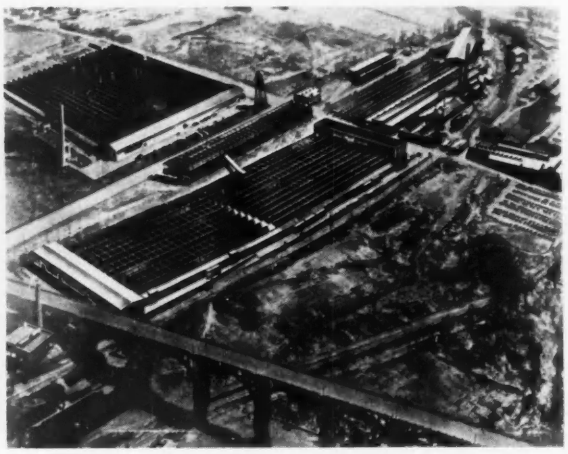
For complete information contact your GM Marine Diesel Distributor or write us.

DETROIT DIESEL ENGINE DIVISION
GENERAL MOTORS • DETROIT 28, MICHIGAN

GM GENERAL MOTORS DIESEL POWER

Highlights in the Growth of Mack Manufacturing Corporation

(*Continued from page 40*)



Fire apparatus is produced at this Mack Factory located in Allentown, Pa., where the firm's original factory opened in 1905. Engines, clutches, transmissions and rear axle gear carriers are produced at another plant in Plainfield, New Jersey.

five years Mack trucks and buses continued to be built in the Brooklyn shop, but in 1905 the business was moved to Allentown, Pa., occupying a building which is still a small part of the vast factory in that city.

The earliest record of Mack fire apparatus is the purchase by the City of Allentown, Pennsylvania, of a Mack tractor for a 75-foot aerial ladder truck in 1909. This unit, by the way, continued in service until 1936 — twenty-seven years. The first Mack pumper was delivered in 1911.

In that year, the Mack enterprise was consolidated with the Sauer Motor Co. of Plainfield, N. J., which had been organized in 1907, and the Hewitt Motor Co. of New York City, forming the International Motor Co., now Mack Trucks, Inc. The three separate lines were soon merged into one, bearing the Mack name and the company began a program of expansion in all three production fields, trucks, buses and fire apparatus.

At the present time there are fifty Mack direct-factory branches and plants covering more than three million square feet of floorspace. In addition there are hundreds of franchised distributors throughout the world.

During World War II, the Mack Company produced some 200 special aircraft crash fire trucks for the U. S. Army. These delivered high pressure fog at 600 psi and carried 1,000 gallons of water. Today the Mack Manufacturing Corporation produces triple combination pumpers from 500 to 1200 gpm capacity, "quadruple combinations" city service ladder trucks, tractor-trailer aerial ladder trucks, hose wagons and rescue trucks, aircraft crash fire apparatus, water tankers up to 2,000-gallon capacity and special disaster units.

Every man in your fire department can get FIREMEN for only $1.25 per annual subscription.

"IT ALL COMES OUT IN THE WASH"

SEE OUR COMPLETE LINE OF

HOSE CONDITIONING EQUIPMENT

CIRCUL-AIR Roto-Jet FIRE HOSE WASHER

IT WASHES
RINSES
DRAINS

- **HOSE IS SELF PROPELLED** – Just a slight hand pressure on hose as it passes through wringer rolls pulls it through on its own power.
- **UNIFORM WASHING** — The Roto-Jet assures you of even, uniform cleaning — at a rate of 20 ft. per minute.
- **WASHES EDGES, TOO** — The hose imbeds itself in the soft, staggered Nylon brushes, which scrub both edges and flat surfaces.
- **DRAINS HOSE LININGS** — "Squeegee" action of neoprene wringer rolls eliminates all need to hang or "walk" hose before drying.

See it demonstrated at Omaha — IAFC - Sept. 18 Booth 8-A

A-Z FIRE HOSE WASHER
Roto-Tables Sold Separately

You can place one complete section in the tank at a time. Soak the hose in cold or lukewarm water. If hose has been contaminated with oil or grease you may use a little soap or detergent. Only one man is required at discharge end to re-roll the hose.

FIRE HOSE DRYER

LABORATORIES APPROVED

ACCEPTED APPROVED - RECOMMENDED

Accepted as the preferred drying medium in most of America's largest fire departments.

THE CIRCUL-AIR CORPORATION

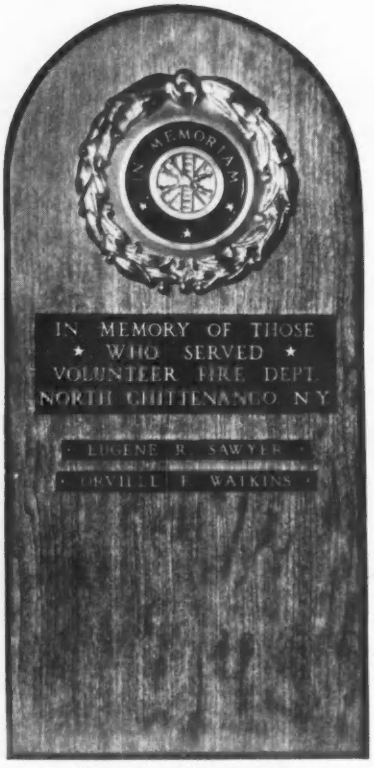
575 EAST MILWAUKEE, DETROIT 2, MICHIGAN

Summary of Fog Nozzle Studies

(*Continued from page 23*)

Series 5 (Continued)	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
4-NAP-D, impingement, fixed	(5–15)	60°	21 (6)	23 (7)	25 (9)	27 (11)
(Applicators available)		SS	15 (8)	18 (10)	20 (12)	21 (15)
Applicator	(5–21)	60°	9	12	14	16
Akrolite Booster Fognozl, combination with ⅛, ¼, or ¼-inch straight stream tip	(Hb)	170°	11	13	14	15

"LEST WE FORGET"



Over-all size 11 x 22 inches

Preserve the memory of those who served!

Beautiful memorial plaques of solid, hand-rubbed cherry. Emblem, Legend plate and Name plates in highly polished cast bronze.

$39.50

plus postage
(without individual names)

For each name desired on the plaque, there will be an additional charge of $3.75. As additional names are needed in the future, they can be supplied for the same price and easily attached to the plaque. Room for 10 names on plaque illustrated.

To order, send name of department and names of deceased members. Send no money in advance. We will bill you after delivery. *Each plaque is unconditionally guaranteed to more than please or you may return by express collect.*

Plaques for Chiefs, Honorary Chiefs, other officers, charter members and for special service awards supplied on request.

——————USE THIS HANDY ORDER FORM——————

Please ship MEMORIAL PLAQUE ☐ OTHER TYPE ☐

Name of Department.....

Names of Deceased Members.....

Town..... Send Bill to.....

CITY PATTERN SHOP, INC.
New Court Street, Eastwood Sta., Syracuse, N. Y.

Series 5 (Concluded)	Text Key*	Degree Setting
O-47-14 Fogtip (75 & 125 lb. figures interpolated)		
6-FO Fogtip, no shutoff (75 & 125 lb. figures interpolated)	(Hb)	65°
NOZZLES FOR 1½-INCH HOSE		
Akr-O-Mist 1210, adjustable	(5–2)	30° 60° 90° SS
Akr-O-Jet 1212, adjustable (Nozzle flow increased in later models)	(5–5)	30° 60° 90° SS
Auto-Stream 1213, adjustable (available as 1222, 1224, 1228 with 2½-in play pipes or hose connections)	(5–7)	30° 60° SS
4-FO-Allfog, fixed, with shutoff	(5–8)	80°
FOA, 50 gpm fixed	(5–10)	Fog
4-NAP-E, fixed (applicators available)	(5–16)	60° ⅝" SS
6-FOA, 100 gpm, fixed no shutoff	(5–11)	70°
Auto-fog, fixed	(5–17)	60° SS
Fogtip, 5-FO, no shutoff (75 & 125 lb. figures interpolated)	(Hb)	80°
6-FOA, 50 gpm, fixed, no shutoff (75 & 125 lb. figures interpolated)	(Hb)	70°
NOZZLES FOR 2½-INCH HOSE		
Akr-O-Mist, 1220,† adjustable	(5–3)	30° 60° 90° SS
Akr-O-Jet 1221, adjustable (Available with 1½-in. thread) Flows estimated from manufacturers' data	(Mfgr.) (Mfgr.)	30° 60° 90° SS
4 NAP, fixed fog, ⅜-in. solid stream (Applicators available)	(5–18)	120° SS
Deluge Fogtip, 6-FOA-250 no shutoff	(5–19)	70°
Deluge Fogtip, 6-FOA-500 no shutoff	(5–20)	70°
Fog-Hog (1245), adjustable 500 gpm	(5–9)	30° 60° 90° SS
Fog-Hog (1247), adjustable 1000 gpm (Estimated from manufacturers' data. Flows required exceeded test facilities)	(Mfgr.)	30° 60° SS

*Where no test key is given symbol "Hb" indicates
†Also available for 1½-inch hose,

Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses)			
75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
–	21	–	25
42 (20)	53 (26)	61 (32)	71 (38)
38 (15)	47 (20)	54 (25)	64 (30)
37 (12)	44 (15)	50 (19)	57 (22)
38 (19)	42 (25)	59 (31)	67 (37)
59 (31)	68 (36)	76	86
82 (35)	97 (45)	108 (55)	116 (67)
87 (26)	99 (34)	110 (47)	117 (59)
50 (21)	57 (27)	67 (36)	70 (42)
71 (26)	83 (36)	93 (45)	102 (55)
75 (14)	85 (20)	96 (25)	101 (30)
– (19)	– (28)	– (34)	– (40)
41	47	52	57
80 (26)	90 (37)	100 (46)	108 (54)
37 (12)	45 (16)	48 (20)	51 (24)
95 (44)	113 (60)	122 (72)	135 (88)
145 (46)	165 (56)	183 (71)	208 (88)
63 (15)	67 (20)	77 (26)	90 (31)
30 (15)	38 (21)	43 (26)	50 (31)
43	50	56	–
43	50	56	–
110 (44)	135 (55)	147 (72)	162 (85)
104 (34)	113 (44)	134 (54)	146 (65)
87 (23)	103 (30)	126 (37)	128 (47)
73 (26)	88 (34)	93 (45)	108 (52)
157	180	203	–
160	185	207	–
–	–	–	–
131	151	170	–
46 (20)	77 (29)	95 (49)	108 (84)
226	262	293	326
– (104)	250 (135)	– (169)	– (203)
– (167)	500 (201)	– (258)	– (298)
317 (147)	375 (196)	425 (247)	473 (297)
340 (150)	400 (204)	452 (252)	520 (298)
367 (154)	435 (206)	465 (254)	530 (300)
130 (64)	153 (84)	170 (104)	187 (123)
925	1069	1200	–
937	1083	1215	–
830	957	1075	–

data from NFPA handbook.

(*Continued on next page*)

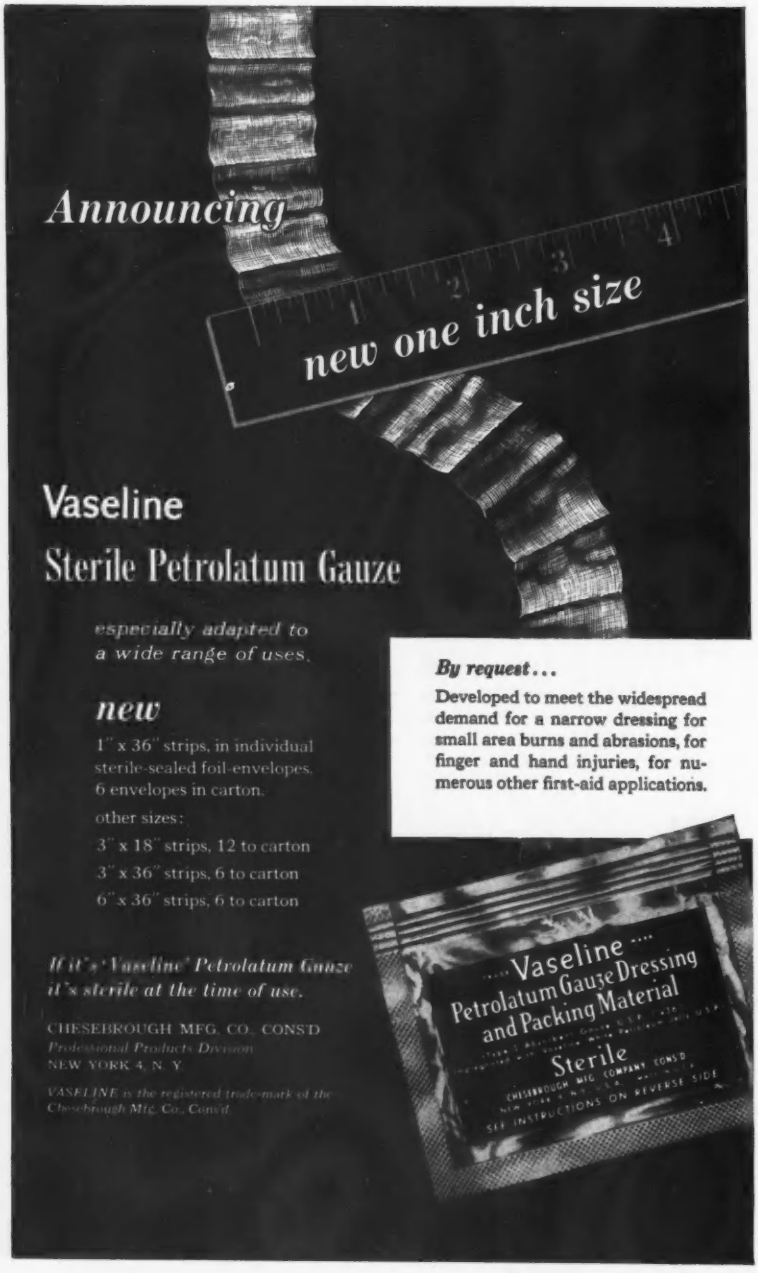
Summary of Fog Nozzle Studies

(*Continued from page 57*)

Series 8	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
Series 8 - Rockwood Spkr. Co.						
NOZZLES FOR 1-INCH HOSE						
SG-48 Water Fog						
combination	(Hb)	60°	14	16	18	20
with ¼-in. solid stream (applicators available)		SS	16	18	20	22
SG-60 Water Fog						
combination	(8–1)	60°	15 (5)	17 (7)	19 (9)	21 (11)
SG-60 Water Fog (Continued)						
with ¼-in. solid stream (applicators available)		SS				
N-22 Water Fog, no shutoff	(Hb)	60°				
W-22 Water Fog, no shutoff	(8–7)	60°				
NOZZLE FOR 1½-INCH HOSE						
SG-48 Water Fog						
combination	(8–2)	60°				
with ⅛-in. solid stream		SS				
with ⅝-in. solid stream (Applicators available)		SS				
N-22 Water Fog, no shutoff	(8–9)	60°				
N-23 Water Fog, no shutoff	(Hb)	60°				
W-22 Water Fog, no shutoff	(8–6)	60°				
Type 50	(8–10)	60°				
Type 50 with tube	(8–11)	60°				
Type 50 with diffusion head	(8–12)	60°				
NOZZLES FOR 2½-INCH HOSE						
SG-48 Water Fog						
combination	(8–3)	60°				
with 1-in. solid stream ((Applicators available)	(Hb)	SS				
N-22 Water Fog, no shutoff	(Hb)	60°				
N-23 Water Fog, no shutoff	(8–5)	60°				
B-500 Water Fog, no shutoff	(Hb)	60°				
W-22 Water Fog, no shutoff	(8–8)	60°				
B-SA-1458	(8–4)	60°				
Series 9 - The Lum Unique Fire Nozzle						
NOZZLES FOR 1½-INCH HOSE						
Unique - No. 1 Tip	(9–1)	30° 60° SS				
No. 2 Tip	(9–2)	30° 60° SS				
No. 3 Tip (Note heaviest flow in solid stream)	(9–3)	30° 60° SS				
No. 4 Tip	(9–4)	30° 60° SS				
No. 5 Tip	(9–5)	30° 60° SS				
NOZZLES FOR 2½-INCH HOSE						
No. 10 Tip (Fixed Spray)	(9–8)	60°				
No. 8 Tip	(9–9)					
No. 9 Tip†	(9–10)	30° 60° SS				
No. 7 Tip	(9–11)	30° 60° SS				
No. 9 Tip†	(9–12)	30° 60° SS				
Series 10 - Kansas City Nozzle Company (Wornall)						
NOZZLE FOR 1-INCH HOSE						
Wornall, peripheral, adjustable	(10–1)	30° 60° 90° SS				

*Where no test key is given symbol "Hb" indicates

†Note different flows with tips having same model number.


Announcing
new one inch size
Vaseline
Sterile Petrolatum Gauze
especially adapted to a wide range of uses.
new
1" x 36" strips, in individual sterile-sealed foil-envelopes, 6 envelopes in carton.
other sizes:
3" x 18" strips, 12 to carton
3" x 36" strips, 6 to carton
6" x 36" strips, 6 to carton
If it's 'Vaseline' Petrolatum Gauze it's sterile at the time of use.
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Developed to meet the widespread demand for a narrow dressing for small area burns and abrasions, for finger and hand injuries, for numerous other first-aid applications.
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Petrolatum Gauze Dressing and Packing Material
Sterile
SEE INSTRUCTIONS ON REVERSE SIDE

Gallons Per Minute (Nozzle Reaction in Lbs. in Parenthesis)			
75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
17 (7)	20 (10)	22 (12)	24 (15)
16	19	21	22
17 (7)	19 (10)	23 (12)	24 (14)
43 (17)	49 (22)	54 (28)	60 (34)
63	73	82	89
90 (37)	105 (49)	111 (56)	118 (72)
44 (17)	53 (24)	59 (30)	64 (35)
62	72	80	85
48 (17)	56 (24)	62 (30)	70 (37)
37 (15)	45 (20)	50 (26)	55 (31)
37 (6)	45 (9)	50 (13)	55 (16)
37 (8)	45 (13)	50 (16)	55 (20)
106 (40)	113 (51)	134 (65)	144 (77)
247 (111)	281 (146)	333†	361†
100	115	130	135
178 (61)	191 (82)	248 (106)	256 (177)
428	500	550	600
104 (38)	117 (51)	131 (64)	146 (78)
500 (178)	571 (249)	636 (336)	– (358)
69 (27)	80 (37)	89 (46)	97 (54)
52 (16)	58 (21)	66 (27)	72 (33)
68 (27)	75 (36)	87 (46)	95 (54)
61 (25)	71 (33)	78 (42)	86 (50)
42 (16)	48 (21)	54 (27)	58 (31)
61 (25)	70 (34)	77 (42)	85 (50)
124 (47)	142 (62)	160 (77)	174 (92)
93 (30)	108 (40)	121 (52)	132 (61)
125 (48)	144 (64)	160 (78)	175 (94)
107 (42)	123 (56)	137 (70)	148 (82)
58 (21)	66 (27)	75 (35)	82 (40)
110 (44)	125 (58)	138 (71)	149 (84)
88 (35)	100 (46)	114 (59)	125 (72)
45 (15)	51 (20)	57 (25)	63 (30)
90 (36)	103 (49)	117 (61)	127 (74)
110 (38)	128 (50)	142 (64)	155 (78)
110 (38)	128 (50)	142 (64)	156 (78)
–	–	–	–
40 (17)	46 (23)	52 (29)	57 (35)
25 (6)	27 (9)	29 (11)	33 (13)
42 (19)	48 (24)	53 (30)	58 (37)
50 (20)	56 (27)	63 (33)	68 (41)
37 (10)	41 (14)	44 (18)	49 (22)
52 (21)	60 (29)	66 (36)	72 (45)
77 (29)	88 (39)	98 (49)	107 (60)
47 (10)	54 (15)	58 (20)	66 (25)
77 (32)	87 (41)	96 (51)	104 (65)
18	20	21	25
19	21	22	25
21	23	24	28
10	12	15	16

data from NFPA handbook.

(*Continued on next page*)

POWHATAN

PLATE No. 175

LEADER LINE SIAMESE
Two-Way-Quarter Turn
Male outlets — ¾", 1", 1¼", 1½" or 2".
Female Swivel inlet 1½", 2" or 2½".
Pin Lug or sensible lug swivel.
Rough body, painted red with polished bronze or chromium plated trim.

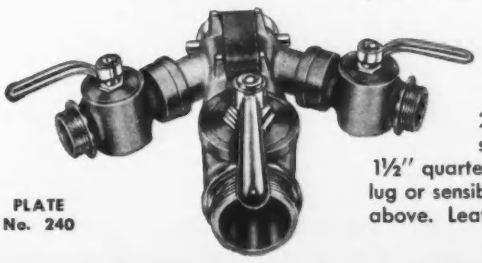


PLATE No. 240

LEADER LINE WATER THIEF
2½" quarter-turn valve on straight-way connection and 1½" quarter-turn valve on each side. Pin lug or sensible lug swivel. Same finish as above. Leather carrying strap.

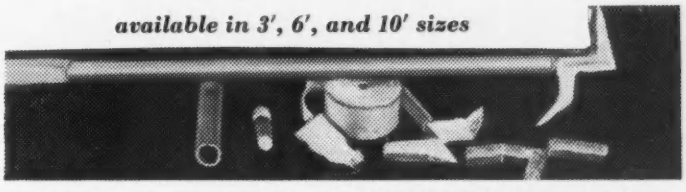
POWHATAN BRASS and IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town, West Virginia
Established 1892

THE HALLIGAN TOOL
Only All-Purpose Tool for the Fire Service
Designed By A Fireman For Firemen

Actually 10 Tools In One
A Multi-Purpose Forcible Entry Tool That Can't Be Beat!
Cross-Forged From One Piece of No. 4140 Steel — Light Weight (8½ lbs.)
3 DRIVING HEADS: HOOK, ADZ, CLAW
UNLIMITED LEVERAGE — FULL BODY PROTECTION — 1001 USES
Thousands now in use on fire apparatus, rescue and emergency units, state and municipal police cars.

And Now . . . The New Look "HALLIGAN HOOK"
Companion to world-famous multi-purpose Halligan Tool
For Tin • Wire Lath • Light Materials • All Boards • Framing, etc.

available in 3', 6', and 10' sizes



Halligan Hook provides Triple Insulation – Rubber, Wood, Fibre Glass – Triple Heated Shaft – 3 Dimensional Head of 4140 Steel. BE FIRST WITH THE BEST!

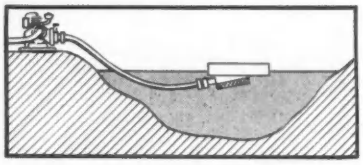
WRITE TO: M. A. HALLIGAN, 1505 METROPOLITAN AVENUE, NEW YORK 62, N. Y.

FOR CLEAN PUMPING IN DEEP or SHALLOW WATER -- Get a REVOLUTIONARY NEW

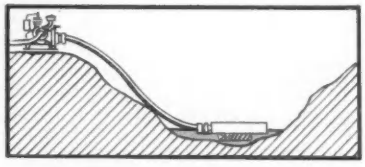
FLOAT-DOCK

IT FLOATS ... above sand and muck--below scum and debris!

No more whirlpools or loss of suction! No more sand and gravel entering your pumps, wearing out impellers, packing, and bearings! Hinged strainer is quickly detached for pumping from vertical water sources such as cisterns, etc. Constructed of heavy, cadmium-plated steel . . . Diagrams below show how FLOAT-DOCK empties a pond.



★ **DEEP DRAFT — Strainer drafts at a few inches below surface where water is cleanest. (Note how hose weight tilts strainer while float remains level!)**



★ **SHALLOW DRAFT — FLOAT-DOCK drafts down to about 5 inches depth and still no whirlpool or loss of suction!**

SEND for COMPLETE INFORMATION

Write your distributor or send direct to manufacturer for low prices and descriptive folder on FLOAT-DOCK. Be sure to give hose size.

Manufactured Only By
FOL-DA-TANK COMPANY
Box 361, Rock Island, Illinois

Summary of Fog Nozzle Studies

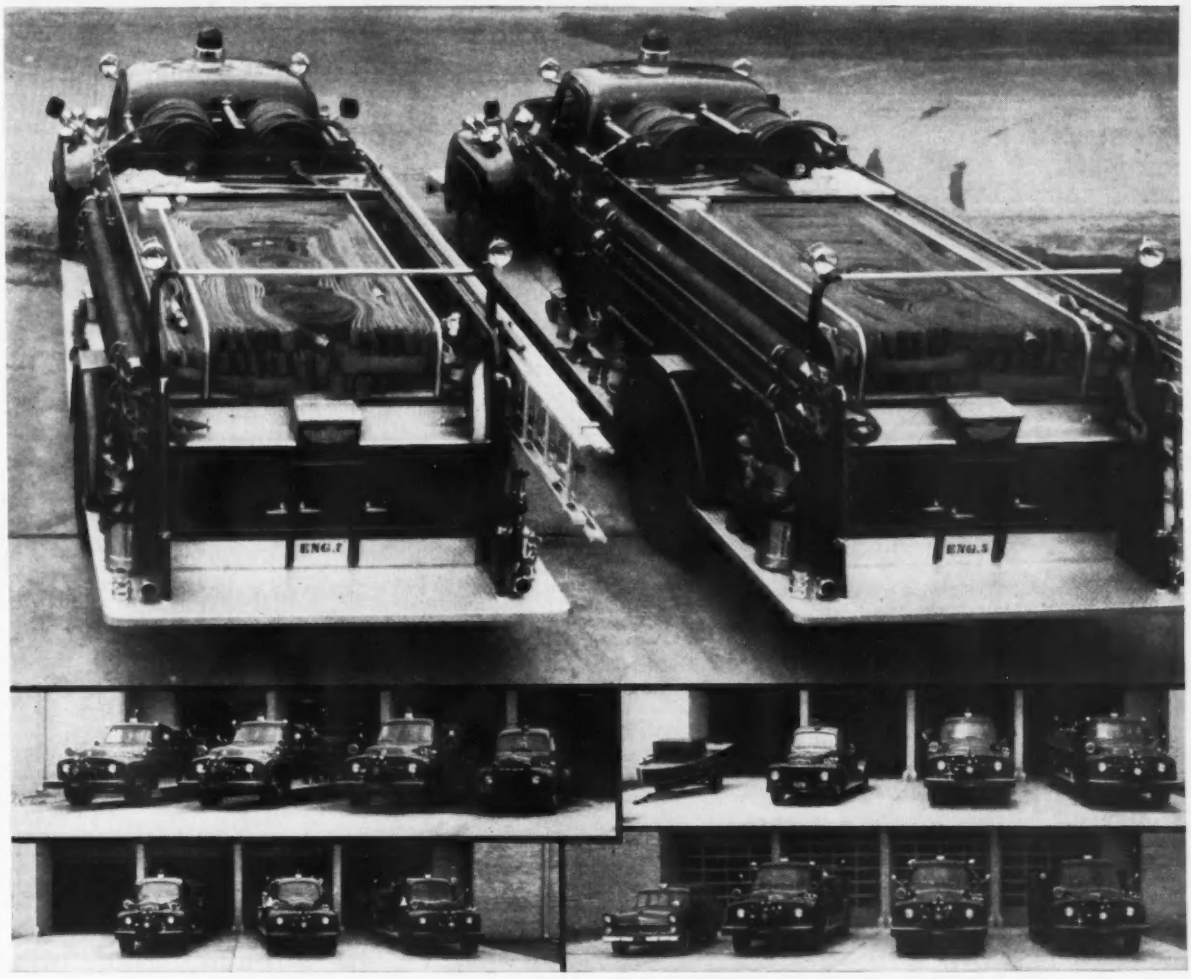
(*Continued from page 59*)

Series 10 (Concluded)	Text Key*	Degree Setting	Gallons Per Minute (Nozzle Reaction in Lbs. in Parentheses) 75 Lbs. NP	100 Lbs. NP	125 Lbs. NP	150 Lbs. NP
NOZZLE FOR 1½-INCH HOSE						
Wornall, peripheral, adjustable	(10–2)	30°	**52**			
		60°	**48**	**60** (25)	**65**	**70**
(other flow ratings		90°	**53**	**57** (22)	**68**	**71**
available)		SS	**16**	**57** (20)	**65**	**73**
				18	**23**	**24**
NOZZLE FOR 2½-INCH HOSE						
Wornall, peripheral, adjustable	(10–3)	30°	**225** (100)	**251** (130)	**290** (158)	**313** (187)
		60°	**257** (101)	**297** (132)	**336** (163)	**364** (192)
Solid Stream Tip (attaches to end of fog nozzle)	(10–4)	SS	**257**	**298**	**332**	**364**
Series 11 - Bete Fog Nozzle, Inc.						
NOZZLES FOR 1-INCH HOSE						
G-5 — 3 way fog (fixed)	(11–2)	Min.	**5.6** (1)	**7.0** (2)	**8.0** (3)	**8.6** (4)
		Max.	**6.6** (2)	**8.0** (3)	**8.6** (3)	**9.0** (4)
NOZZLES FOR 1-INCH & 1½-INCH HOSE						
G-10 — 3-way fog (fixed)	(11–3)	Min.	**11** (4)	**13** (5)	**15** (7)	**19** (8)
		Max.	**18** (5)	**21** (7)	**23** (9)	**26** (10)
G-15 — 3-way fog (fixed)	(11–4)	Min.	**32** (6)	**36** (8)	**39** (10)	**42** (11)
		Max.	**41** (12)	**46** (16)	**51** (21)	**57** (23)
NOZZLES FOR 2½-INCH HOSE						
Model 250, no shutoff	(Hb)	90°	**120**	**139**	**155**	**240**
Model 500, no shutoff	(Hb)	90°	**197**	**228**	**255**	**400**
Series 12 - Cardox						
NOZZLES FOR 1-INCH HOSE						
HLW-1 (small tip)	(12–4)		**5**	**5.6**	**6.6**	**7.3**
1-in. non-adjustable	(12–5)	Fixed	**8** (3)	**10** (5)	**11** (6)	**12** (8)
		SS	**8** (4)	**10** (5)	**11** (7)	**12** (8)
1-in. non-adjustable	(12–6)	Fixed	**8** (3)	**9** (5)	**11** (7)	**12** (8)
		SS	**8** (4)	**9** (6)	**11** (7)	**12** (8)
Series 13 - Fogg-it						
NOZZLES FOR 1-INCH HOSE						
Fogg-it 5G (fixed)	(Hb)	45°	**4**	**5**	**6**	**7**
Fogg-it 10G (fixed)	(Hb)	45°	**8**	**10**	**11**	**12**
Fogg-it 15G (fixed)	(Hb)	45°	**13**	**15**	**17**	**18**
NOZZLES WITH GARDEN HOSE THREAD						
Tips, LV Type	(Hb)	45°	**3**	**4**	**5**	**6**
Fogg-it 5	(Hb)	45°	**7**	**8**	**9**	**10**
Series 14 - Western Fire Equipment Co. "Forester" Nozzle						
NOZZLES FOR 1-INCH HOSE						
No. 3 fog tip	(14–1)	60°	**2.6** (2)	**3.0** (2)	**3.3** (2)	**3.6** (3)
No. 15 fog tip	(14–2)	60°	**12** (5)	**14** (7)	**16** (8)	**17** (10)
No. 4 fog tip	(14–3)	60°	**3.5** (1)	**4.0** (2)	**4.5** (3)	**4.9** (3)
No. 6 fog tip	(14–4)	60°	**5** (2)	**6** (3)	**6** (4)	**7** (5)
No. 8 fog tip	(14–5)	60°	**6** (2)	**8** (3)	**8** (4)	**9** (5)
⅛-in. solid	(14–6)	SS	**4** (2)	**5** (3)	**5** (4)	**6** (5)
7/64-in. solid	(14–7)	SS	**9** (4)	**10** (6)	**11** (8)	**13** (9)
¼-in. solid	(14–8)	SS	**16** (7)	**18** (10)	**20** (13)	**22** (15)
9/64-in. solid	(14–9)	SS	**24** (11)	**28** (15)	**31** (19)	**34** (22)
⅜-in. solid	(14–10)	SS	**34** (15)	**39** (20)	**44** (25)	**48** (30)

*Where no test key is given symbol "Hb" indicates data from NFPA handbook.
†Note different flows with tips having same model number.

Correspondence Wanted

A NOTE from a fire fighter in Scotland states that he would be interested in exchanging views on fire fighting with any member of the NFPA. Readers of FIREMEN who wish to engage in such correspondence can write to: Sub Officer Stanley Dawson, Fire Station, Roseburgh Street, Galasheels, Selkerkshire, Scotland.



Lightweight dacron hose saves space, strain, time for this fire department

Poised for prompt action! That's the immediate idea conveyed by these sleek trucks of Sedgewick County, Kansas, fire department. And an important contribution to fast action is the compact hose in those truck beds. It is Quaker's Dacron hose . . . flexible for rapid transfer from truck to fire . . . lightweight for fast, strain-free handling.

These are not the only reasons why 21,000 feet of this Dacron hose is practically standard equipment at all four of the county's fire stations. Another reason is the 50% greater pressure it withstands compared to conventional hose. Another is its rugged resistance to heat, chemicals, abrasion. Another reason is that it folds flat permitting greater footage with less bulk in truck space. Still another is its quick drying feature due to the super strong Dacron filler thread, combined with the double jacket of cotton warp thread surrounds non-porous rubber tube.

Our Delaware-Victor brand is rated for 600 pounds and our Bond-Battleship brand for 400 pounds. Both are factory tested under severe hydrostatic pressures far more rugged than the most severe use they would get in action.

We also manufacture a complete line of water and chemical fire hose for every municipal and industrial requirement. Write for free folder and name of nearest distributor equipped to serve you locally.

DIVISIONS OF HKP H. K. PORTER COMPANY, INC.

QUAKER RUBBER CORPORATION
Philadelphia 24, Pennsylvania

QUAKER PIONEER RUBBER MILLS
San Francisco 7, California

Sensational... NEW!

360° REVOLVING LIGHT

TRIPPE HI-BALL

Picture this stunning light on your emergency car—whether it be FIRE, POLICE, AMBULANCE OR WRECKER. Flip the switch and instantly the parabolic mirror begins to rotate around the 100 candle power bulb at 60 times a minute. The flash is so intense not only at great distances but close by that all traffic is immediately alerted.

Yes, here is the ultimate in a warning light! Beautiful and distinctive, 9½" in diameter, stands 11 inches above the roof. Easily demountable.

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TRIPPE MANUFACTURING COMPANY

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Builders of Specialized Rescue and Fire Apparatus

GOLD CREST

SAFETY EQUIPMENT CORP.

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DUNELLEN, NEW JERSEY

A Cornelius HIGH PRESSURE AIR COMPRESSOR HELPS SAVE LIVES and PROPERTY

MODEL 130R1401

Disaster strikes without warning—sometimes in rapid succession. Is your department ready, or is it dependent upon outside sources for a fresh supply of compressed air? Have a Cornelius air compressor always available for charging high pressure breathing equipment air tanks. Economical to own and to use. *Write for free illustrated catalog today.*

THE CORNELIUS COMPANY

566 39th Ave. N.E., Minneapolis, Minn.

Dollars from the Forests

SOME idea of the value of national forest resources to the United States may be gained by considering one year's income. According to the latest report of the United States Department of Agriculture, the U. S. Forest Service deposited $81,137,294.18 in the Federal treasury during the fiscal year ending June 30, 1955.

This all-time record financial income was largely due to an increase in timber sales under the Service's scientific management program. Harvesting of national forest timber was stepped up by access roads built into inaccessible timber stands. These roads, constructed by timber purchasers and the government, also serve to provide quicker response for forest fire protection organizations.

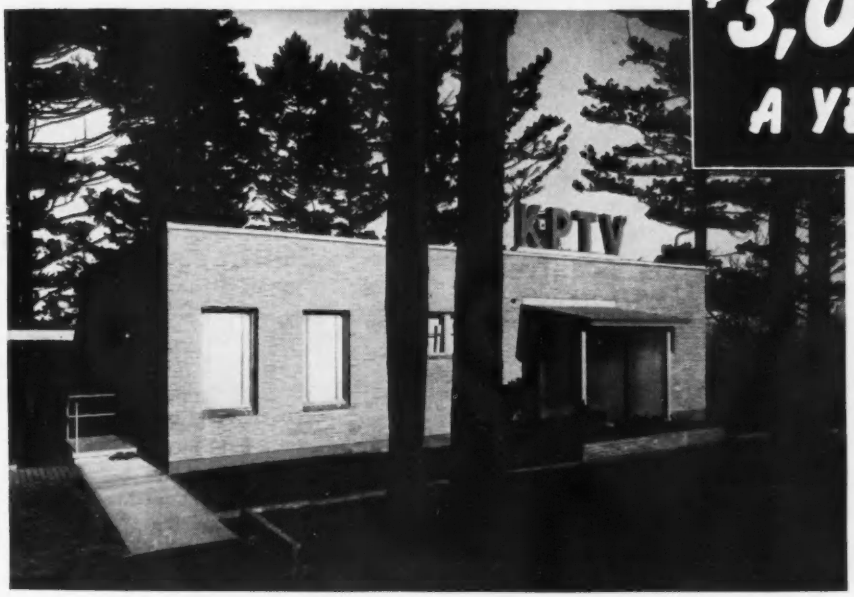
The 1955 income of federal lands resulted from the timber grazing permits, and special uses of forests such as: summer homes, resorts, rights-of-way, water rights, and minerals. Timber sales amounted to more than seventy-three million dollars; receipts from grazing of livestock totaled nearly three million dollars, and fees from special uses of the forests were more than one and a half million dollars. More than $1,600,000 income was obtained from land utilization areas under Federal administration.

Delaware Short Course

APPROXIMATELY 150 fire fighters received certificates at the conclusion of the 7th Annual Short Course, sponsored by the Delaware State Bureau of Vocational Education and the Delaware Volunteer Firemen's Association. Classes were held at Camden, Delaware, July 16–24. According to Frank M. Forstburg, Supervisor of Trades and Industries in charge of Foreman Training under the Vocational Division, fire training included instruction in the use of gas masks and fire fighting equipment; combating of structural, flammable liquids, aircraft, and automobile fires; and pump operations.

Heading the Educational Committee were Chairman C. Wesley Robinson and Vice-President Charles H. Jester, who succeeds Charles L. Jones, late president of the Volunteer Firemen's Association.

KPTV protects its property *Automatically*.... gets better FIRE and BURGLARY PROTECTION and SAVES $3,000 A YEAR



ADT Automatic Protection has not only proved a better safeguard for our property and its earning power than other types of protection, but it has also saved us at least $3,000 a year.

Ronald K. Adams Jr.
Station Manager

KPTV, known as the "Pioneer Station," was the first television station in Portland, Ore., the first anywhere with UHF, and the first to guard a remote transmitter against fire, burglary, and vandalism with ADT Automatic Protection.

Throughout the building, entrance doors, windows, and all other accessible openings are protected by ADT Central Station Burglar Alarm Service. And to detect and report an outbreak of fire, the building is completely protected by ADT Aero Automatic Fire Detection and Alarm Service.

These services, though less expensive than other methods, give better protection—assuring continuity of operation and the resulting benefits to advertisers, viewers and employees.

Whether your premises are new or old, sprinklered or unsprinklered, you can protect them completely, effectively and economically by appropriate combinations of ADT Automatic Protection Services. These include: Burglar Alarm, Sprinkler Supervisory and Waterflow Alarm, Automatic Fire Detection and Alarm, and Automatic Heating and Industrial Process Supervisory Services.

For details, call our local sales office if we are listed in your phone book; or write to our Executive Offices.

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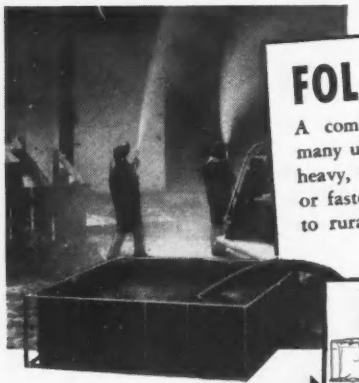
A NATIONWIDE ORGANIZATION
Executive Offices • 155 Sixth Avenue, New York 13, N. Y.



FOL-DA-TANK 1000-GALLON RESERVOIR

A completely portable, auxiliary water tank of many uses. Sturdily constructed of steel tubing and heavy, waterproof treated duck. Requires no tools or fasteners to set up or take down. Indispensible to rural volunteer units. Reasonably priced.

★ FOLDS TO 10"x30"x8'3"
★ FAST-EMPTYING SPILLWAY
★ HEAVY DUTY CONSTRUCTION

READY FOR USE IN SECONDS

Contact your distributor, or write

FOL-DA-TANK COMPANY

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WATER when and where you want it!

with **HARODIKES**

Portable Canvas Water Tanks

THE ECONOMICAL AND EFFICIENT WAY TO CARRY AND STORE WATER.

ON THE JOB - ON THE SPOT
KEEPING AMERICA GREEN

EXCLUSIVE FEATURES

- Self Supporting
- Easily Back-packed
- Ideal for Relay Pumping
- Easily Transported

Available in 150 & 300 gallon sizes

A WATER SUPPLY AT THE SCENE OF THE FIRE

Write TODAY for Full Information and Price List

HARODIKES INCORPORATED
NORTH DIGHTON, MASSACHUSETTS

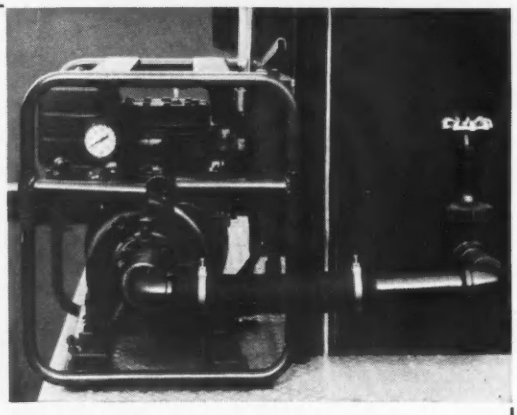
HALE

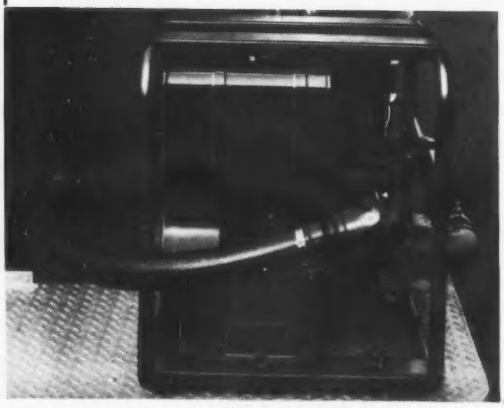
TYPE FZZ

Portable Unit

Installed on Running Board of Apparatus

Picture at right shows Hale FZZ portable pumping unit (from Suction Side) neatly installed on running board of pumper. Shut-off valve at right leading from Booster tank.





Below, view of FZZ from Discharge Side showing Discharge running into Booster line.

Pump can be easily detached to fight fire direct; as standby pump; or to supply larger pumper from source of water inaccessible to the pumper.

The FZZ will supply from draft 2 capable fire streams thru 1½" lines. Performance substantially exceeds NBFU and NFPA cap. and pressure requirements.

Write for FZZ folder today. Ask for Demonstration.

HALE FIRE PUMP CO.
Conshohocken, Pa.

Fire Pumps in all Standard Capacities

New Members in NFPA

LISTED below are the fire departments who enrolled in the National Fire Protection Association during the month of July. They join with more than 2,100 fire departments throughout the world who are assuring their fire fighters of a continual flow of new and valuable information through NFPA publications.

To the fire chiefs reading this issue, we extend an invitation to try NFPA membership for their fire departments.

We are certain that the average fire fighter is interested in the latest activities and newest developments of the fire service . . . that he wants to improve his position and eventually move up through the office of ranks . . . and that he can get the information that he needs, through publications of the NFPA. We are certain that you, as a fire chief, want to provide your men with a good reference library in each fire station.

On page 19 of this issue is a description of the NFPA fire department membership plan together with an application blank. Take a pen now . . . fill out the blank . . . and send in a list of names of fire fighters in your department who want to subscribe to FIREMEN magazine, and who want to keep posted through other NFPA publications.

NFPA Welcomes:

The following fire chiefs and fire departments as Fire Department Members in the Association:

California: Escondido Fire Department, Escondido; Lynwood Fire Department, Lynwood; La Selva Beach Volunteer Fire Department, Watsonville.

Connecticut: Bloomfield Center Fire District, Bloomfield.

Indiana: Chief Al Sergeant, Penn Twp., South Side Fire Department, Mishawaka.

Michigan: Berrien, Pipestone & Eau Claire Volunteer Fire Department, Eau Claire; Chief John D. Hoogesteger, Wyoming Township, Grand Rapids.

New York: East Meadow Fire Department, East Meadow.

North Carolina: Chief J. S. Boone, Chapel Hill Fire Department, Chapel Hill.

Oklahoma: Perry Fire Dept., Perry.

Oregon: Central Point Rural Fire Protection District, Central Point.

Quebec: Montreal West Volunteer Fire Department, Montreal West.

Texas: Temco Aircraft Corp., Dallas.

Utah: Chief J. La Fleur, South Ogden Volunteer Fire Department, South Ogden.

is still the Beacon Ray

Whichever way you take it, with two lamps or three, the Beacon Ray still leads in quality and popularity.

Before you decide which type you want, and we offer both types, you should know why

THE TWO LAMP MODEL IS BETTER

1. Gives brighter "flash" effect
2. Uses two thirds as much current
3. Generates less heat
4. Puts less load on motor
5. Requires less maintenance
6. Weighs less.

Those who know choose the two lamp model. After long laboratory experiment and test we shelved the three and four lamp models and introduced the Beacon Ray as a two lamp unit because it was superior.

The effect of the moving light is better than a flashing unit because of the relative interval between full beam intensity and the "off beam" darkness. Adding more lamps reduces the "off" interval, reducing contrast and producing an effect more like the less effective flashing light.

Increased current consumption, greater internal heat, and heavier motor load all result in greater wear and increased maintenance. Why pay that premium for less effective performance?

The choice is up to you. We prefer to sell the best, but we have both in production for your selection.

FEDERAL SIGN and SIGNAL Corporation

formerly: Federal Enterprises, Inc. **8717 S. State St., Chicago 19, Ill.**

"I recommend BI-KLEEN for the FIRE HOUSE as well as FIRE HOSE!"

For cleaner, longer-lasting fire hose

This statement was made recently by a prominent fire chief because *Bi-Kleen* is not only the ideal cleaning and protection agent for all cotton rubber-lined hose, but it also does an amazingly fast and efficient job of cleaning oil, dirt and grease from the floor — even rough cement floors. Fire hose racks and truck beds need a good cleaning compound, too — and *Bi-Kleen* does a perfect job — keeps equipment "inspection clean" *all* the time with less scrubbing!

Order the inexpensive trial size today! You'll discover safe, non-toxic *Bi-Kleen* will save hose, save work, save money. Sold by the makers of the finest fire hose in the world — Bi-Lateral, flat-folding, non-creasing fire hose.

Bi-Lateral®

FIRE HOSE COMPANY
20 No. Wacker Drive
Chicago 6, Illinois

Now! Every Firefighter Can Afford This Valuable ADVANCED PROFESSIONAL TRAINING!

"The Science and Technique of

FIRE

PREVENTION, PROTECTION and EXTINGUISHMENT"

New "PAY-by-the-LESSON" Plan!
NO BURDENSOME TIME PAYMENTS
Set your own study pace. Take up to 3 years for completion of the course.

APPROVED for KOREAN VETS!
VA Pays Entire Cost of Training

A comprehensive correspondence course for Firefighters who wish to increase their technical knowledge and improve their practical efficiency. While invaluable for promotional purposes, it is also of tremendous advantage in the daily work and responsibility of Firefighters everywhere.

37 INTERESTING LESSONS
Test questions with each lesson rated and returned with model answers.

5 WRITTEN TRIAL EXAMS
Rated and returned with individual comments and constructive criticism by examiners.

Ask Your Own Superior Officers!

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DELEHANTY
CORRESPONDENCE SCHOOL
Licensed by New York State
113 E. 15th St., New York 3, N. Y.
OVER 80% of N. Y. City's Firemen are Delehanty-Trained

Fire Apparatus Manufacturers Meet

RICHARD E. VERNOR, Chairman NFPA Board of Directors and Manager, Fire Prevention Department, Western Actuarial Bureau and Warren Y. Kimball, Manager, NFPA Fire Services Department, were featured speakers at the meeting of the Fire Apparatus Manufacturers' Association, Inc., at Mackinac Island, Michigan, July 21–22.

Newly elected officers of the Association include President Lester W. Young, Young Fire Equipment Corporation, Buffalo, New York; Vice President Richard S. Howe, Howe Fire Apparatus Company, Anderson, Indiana; and Earl L. Koepenick, Fire Apparatus Manufacturers' Association, Inc., Washington, D. C.

Elected to the Board of Directors for a term of one year were: P. E. Van Pelt, P. E. Van Pelt, Inc., Oakdale, California; Fred Waterous, Waterous Company, St. Paul, Minnesota; and Francis Brigham, Oren Roanoke Corporation, Roanoke, Virginia.

Elected to the Board for two years were: Richard Sargent, Hale Fire Pump Company, Conshohocken, Pennsylvania; Joseph Whitcomb, Maxim Motor Company, Middleboro, Massachusetts; and L. A. Nelson, The General Fire Truck Corporation, Detroit, Michigan.

Elected to the Board for three years were: Howard Spain, Seagrave Corporation, Columbus, Ohio; Joseph Grossman, Ward LaFrance Truck Corporation, Elmira, New York; and Cy Welch, The Four Wheel Drive Auto Company, Clintonville, Wisconsin.

The Association plans to hold its next meeting at Columbus, Ohio, in January, 1956, when the Seagrave Corporation will act as Host.

Warren Y. Kimball shown with Lester W. Young of the Young Fire Equipment Corporation, Buffalo, New York, and President of the Fire Apparatus Manufacturers' Association, Inc.

FIRE DEPT. CHIEF

IDENTIFICATION PLATES

FIRE DEPARTMENT OFFICERS

MEMBERS CIVIL DEFENSE

Standard made, as per cut, CHIEF, ASSISTANT CHIEF, CAPTAIN, LIEUTENANT, PRESIDENT, CHAPLAIN, MEMBER, VOLUNTEER, DRIVER, ENGINEER, SECRETARY, TREASURER, POLICE & AUX. MEMBER.

●

Priced .63c single, $1.25 in pairs. White base plastic fire engine RED finish.

Available (on order) in RED, YELLOW & BLACK base, white finish or corresponding colors.

Made SPECIAL, as you wish, your department name, Town, Township, association, etc. **Minimum order: 50 plates @ .88c each, 100 @ $62.50.**

See your favorite dealer or write for prices and other information.

E. B. LANE, Distributor
32 GREENWOOD AVE.
TOLEDO 5, OHIO, U. S. A.

In Canada:
C. E. HICKEY & SONS, LTD.
HAMILTON, ONTARIO

The Answer to your GIFT PROBLEMS!

"BRONZE FIREMEN" HELMET TABLE AND DESK LAMPS
Ideal for retirement gifts and special awards — in lifetime polished bronze.

Single Lamps, $15.00 postpaid — *Matched Pairs,* $28.00

The Norrington Co., REHOBOTH, MASS.

Get Set to Spring into Action with INDIAN FIRE PUMPS

If you've been under the impression that INDIAN FIRE PUMPS were intended for use only on brush and grass fires you're in for a big surprise. Just read this letter from a user who once thought the same thing:

"Choice for Quality the World Over"

"I once thought INDIAN FIRE PUMPS had use only where a volunteer department was putting out grass fires. Since including a No. 90 galvanized INDIAN on our apparatus, however, I found that the men would not use any other type of extinguisher.

That led me to buy a number of No. 90 solid brass tank INDIAN FIRE PUMPS and place them on all our equipment. We are most enthusiastic about INDIANS and prefer them to any other hand extinguisher for all class A and small oil fires."

George P. Lasher, Fire Chief

We urge you to make the same test. Put in several INDIAN FIRE PUMPS now and try them out. Convince yourself of their many, many applications. And remember—no chemicals—only clear water.

D. B. SMITH & CO.

408 MAIN ST.
UTICA 2, N.Y.

PACIFIC COAST BRANCHES:

Hercules Equipment & Rubber Company, Inc.
736 Brannan Street
San Francisco 7, Calif.

Fred E Barnett Company
2005 S.E. 8th Avenue
Portland, Oregon

Hill & Mac Supply, Inc.
625 Lander Street
Seattle 4, Washington

Harris Supply Company
1315 So. Flower Street
Los Angeles 15, Calif.

Fred E. Barnett Company
600 Spring Street
Klamath Falls, Oregon

L. N. Curtis & Sons
426 W. Third Street South
Salt Lake City, Utah

CANADIAN AGENTS:

Fleck Brothers, Limited
110 Alexander Street
Vancouver, B. C., Canada

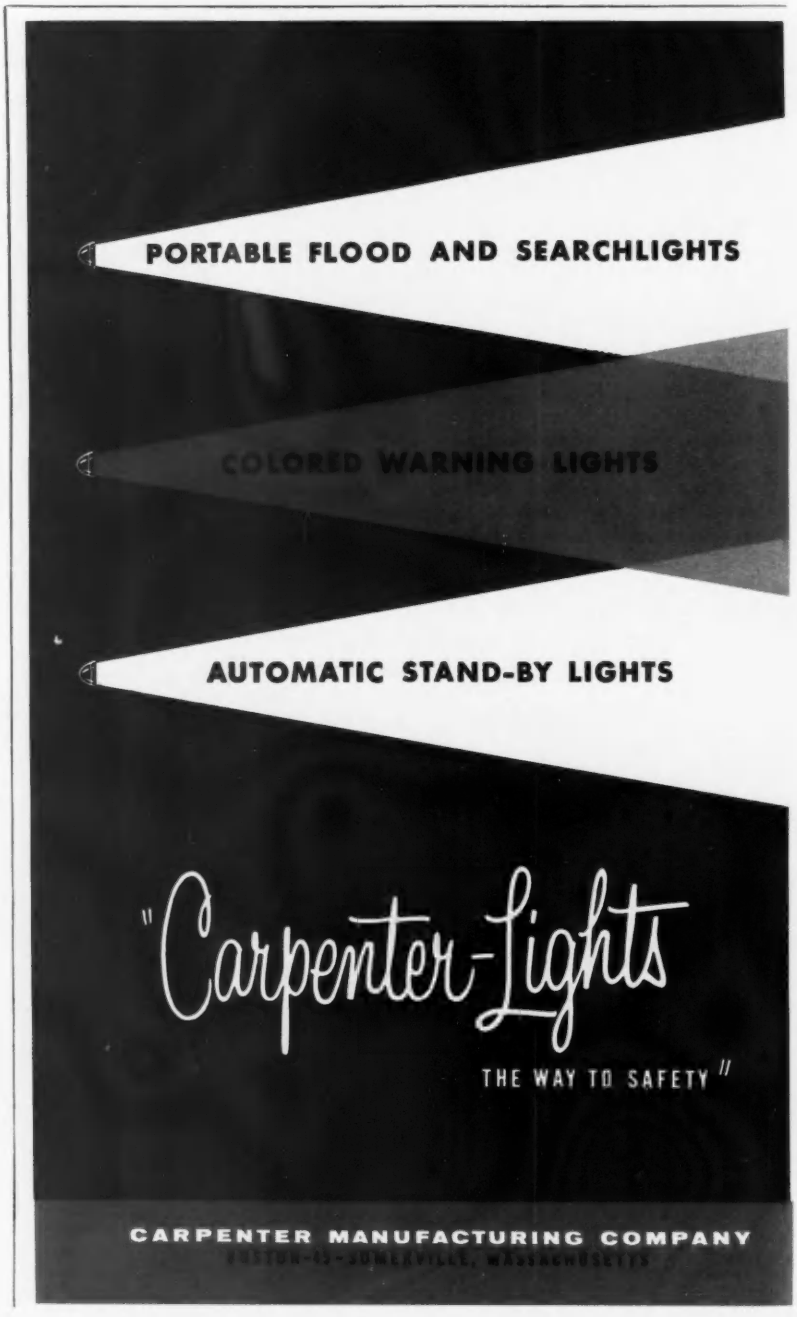
G. F. Higley & Sons, Ltd.
Hamilton, Canada

What's New in Fire Equipment, Catalogs and Bulletins

Some news items and announcements of interest to fire chiefs and others responsible for purchasing fire fighting and fire protection equipment.

A new aluminized fire suit, "Fire King," with Scott Air Pak, has been announced by *Wheeler Protective Apparel, Inc.*, 224 West Huron St., Chicago, Illinois. . . . A check chart for flammable liquid container protection during plant vacation shut-down is available for industries in your community. Write for Safety Bulletin, Volume 3, Number 4, issued by *The Protectoseal Company*, 1920 South Western Avenue, Chicago 8, Illinois. . . . Developments of a new emergency vehicle siren, Pyle Model 7, is announced by *Pyle-National Company*, Department S, 1334 N. Kostner Ave., Chicago 51, Illinois. Manufacturer says siren provides a louder signal as vehicular speed increases and peak performance on 22 amperes of current.

Two new standard Fireye fire detection systems are illustrated and described in a seven page bulletin published by *Fireye Division, Electronics Corporation of America*, Cambridge 42, Mass . . . A useful fire fighting device is the J. E. High hose clamp. Made as a safety measure device to hold hose on sills and ladders, clamp is also of use for some rescue work. Get details from *John E. High, General Delivery*, Winston Salem, N. C.



The Cedar Grove, New Jersey, Rotary Club as a golden anniversary project installed new *Du Mont* two-way radio communications equipment for the Cedar Grove ambulance unit. . . . Newest alarm center in the nation-wide ADT System was opened in the Quad-City central station of *American District Telegraph Co.* at Rock Island, Illinois, on July 21. . . .

Notifier Mfg. Company, Lincoln, Nebraska, announces a new line of UL and FM listed automatic sprinkler supervisory systems utilizing Notifier's fully automatic auxiliary and proprietary type control panels.

Have you tried "Bi-Kleen," the special cleaning agent for cotton rubber-lined hose and even rough cement floors? An inexpensive trial size can be ordered from *Bi-Lateral Fire Hose Co.*, 20 North Wacker Drive, Chicago 6, Illinois. . . . Before you buy, check into the *Akron* line of hose brass goods including "Monarch" ladder pipe, new "Fog-Hog" nozzle with "E-Z Grip" aluminum handle attachment. . . . Specially designed for short wheel base pumpers are "Alco-Lite" aluminum alloy extension and roof ladders. Check with *Aluminum Ladder Co.*, Worthington, Pa.

For grass and brush fire fighting, Barton-American UA Front-Mounted Fire Pump may be just the thing for your department. UA Pump Bulletin 8330-B is yours free from *American-Marsh Pumps*, Battle Creek, Michigan, or Stratford, Ontario. . . . Free pamphlet on "Bar-Way" high-pressure hose couplings is available from *Bar-Way Mfg. Co.*, Stamford, Conn. . . . The complete line of *Blackinton* badges will be on display at Booth 83, at the I.A.F.C. Convention in Omaha, Nebraska.

Keep this handy at your headquarters: Catalog 350 by *Cairns & Bro., Inc.*, Allwood, Clifton, N. J. . . . Here's valuable information on loudspeakers: the 28-page University Technilog offered free by *University Loudspeakers, Inc.*, Desk 10, 80 South Kensico Ave., White Plains, N. Y. . . . To meet demand for a narrow dressing for small area burns, finger and hand injuries, a new one-inch size sterile petrolatum gauze is being made by *Chesebrough Mfg. Co.*, Cons'd. . . . For retirement, memorial and special service award plaques, keep this name on record: *City Pattern Shop, Inc.*, New Court Street, Eastwood Station, Syracuse, N. Y.

Don't be dependent on outside sources for a fresh supply of compressed air. Get illustrated catalog today on Cornelius air compressor from *The Cornelius Co.*, 566 39th Ave., N.E., Minneapolis, Minn. . . . *Delehanty Correspondence School*, 113 E. 15th St., New York 3, N. Y., offers a comprehensive correspondence course for fire fighters who wish to increase their knowledge. . . . A handy and inexpensive piece of fire fighting equipment is "The King," a steel bristle broom with detachable handle for easy storage. Contact *Fire & Police Mfg. Corp.*, 24–20 Bridge Plaza So., Long Island City 1, N. Y.

For clean pumping in deep or shallow water, "Float-Dock" with dual-use strainer merits your attention. Write for descriptive folder to *Fol-Da-Tank Co.*, Box 361, Rock Island, Illinois. . . . Do your men have automobile identification plates? Drop a line to *E. B. Lane*, 32 Greenwood Ave., Toledo 3, Ohio. . . . Literature and material samples on bunker coats and pants are ready for you at *Midwestern Safety Mfg. Co.*, Mackinaw, Illinois. . . . Check into Nicerol Foam Compound for efficiency and economy. Write to *George T. Reynolds & Associates*, P. O. Box 395, Thornwood, N. Y. . . . Flat back badges in a wide variety of designs and finishes are shown in a new 32-page catalog available from *Nielsen-Rionda, Inc.*, 40 John St., New York 38, N. Y. . . . For retirement gifts and special awards, the "Bronze Firemen" helmet table and desk lamps are unusually attractive. They're made by *The Norrington Co.*, Rehoboth, Mass. . . .

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YOU are reading the largest issue of FIREMEN magazine ever published. It is now being distributed to every public fire department in the United States, and to many more in Canada. Many of the 43,000 copies of this IAFC convention issue are going to NFPA member fire departments in other countries of the world, and to key industrial plant and airport fire brigades.

Purpose of such wide circulation is to encourage non-member fire departments to take advantage of membership in the National Fire Protection Association . . . to get into the habit of referring to NFPA technical standards as a source for the latest and best recommendations for fire protection and fire prevention . . . to keep pace with new and numerous fire service developments by reading FIREMEN, the NFPA *Quarterly*, and *Fire News*.

The 63 manufacturers whose advertisements appear in these pages make such wide coverage of the fire service possible. By choosing this issue to tell about their product they are contributing to the growth of NFPA and are providing you, as a reader, a display of the latest and best equipment available for fire detection and extinction.

JANESVILLE "Quality" turn out suits give that added margin of protection that means your SAFETY . . . day and night, summer or winter!
Janesville APPAREL CO.
JANESVILLE, WISCONSIN

300+ H.P.

Power Packed Performance

There is power to spare in this **new** Seagrave V-12 . . . 300 plus H.P. It is the most dependable engine ever built for fire service and backed by Seagrave's more than twenty years of experience in producing Vee type 12 cylinder engines.

Not a "souped" up model. No raising compression pressure nor increasing engine speed. Increased power is obtained by introducing a maximum of fuel-air mixture into the cylinders by enlarged inlet valves; inlet passages in cylinder head for smoother flow of inlet gases; cam shaft engineered for maximum valve lift and dwell in open position. These features permit the maximum filling of cylinders by deep engine breathing. Large exhaust manifolds and exhaust pipe provide free flow of exhaust gases. There is no exhaust back pressure . . . Carburetors, crankshaft, connecting rod bearings, main bearings, upper piston rings, cylinder sleeves, valve springs, washers, keepers, oil pump, fly wheel, radiator fan . . . all are new and help provide the abundance of power.

For trouble-free service, durability, perfect performance, greater power, there is no other engine that can equal the new Seagrave 906 V-12 for fire service.

THE SEAGRAVE CORPORATION—Columbus, Ohio
Bickle-Seagrave Ltd—Woodstock, Ont.

Seagrave V-12

the Greatest Name in Fire Apparatus

Completely Modern . . .

HALE

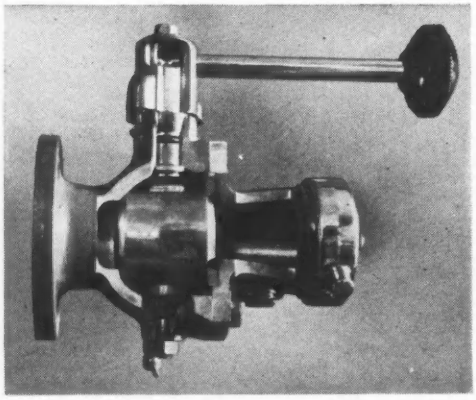
QL and QL-75 Series of 2-Stage Centrifugal Pumps

Features . . .

- Panel Mounted Relief Valve Control
- Dual Priming Control (Push-button and Manual)
- Dual Pressure-Volume Control (Push-button and Manual) with Visual Indicator
- Bronze Forged Ball Discharge Valves
- Low Over-all height provides substantially more room for tank, compartments, or hose space
- Quality-built for rugged, reliable service

VALUABLE TIME SAVED: . . .

While we have always emphasized Reliability of priming rather than Speed of priming, we cannot help taking pride in the results obtained in the test shown in this picture. PRIMING TIME (Water out the Nozzle) WAS BETTER THAN 18 SECONDS FOR THIS HALE QL PUMP ON A 22-FOOT LIFT! This was done at reasonable Engine speed in both series and parallel.
Minimum specifications require priming on a 10-ft. lift in 30 seconds. A substantial reserve on all HALE products is a consistent HALE policy.

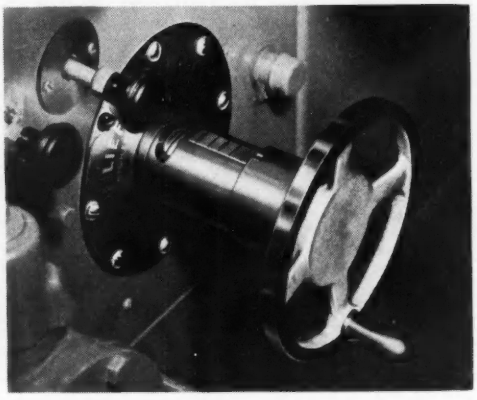


Bronze Forged Ball Discharge Valve

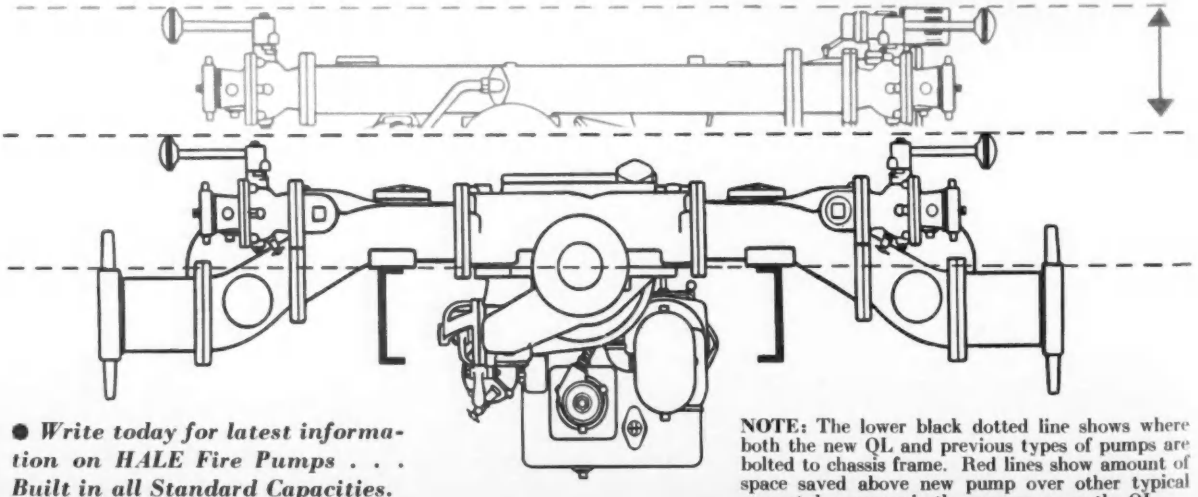
Above is cut-away view of popular Hale Ball Type Discharge Valve. This bronze-forged Valve is now furnished on new Hale pumps and is available in 2½" size on all Hale Fire Pumps regardless of age.

HANDY RELIEF VALVE CONTROL

Picture at right shows Relief Valve Control and handy Setting Wheel installed on instrument panel. This type of control is now used on all Hale major pumps.



DESIGN SAVES SUBSTANTIAL SPACE



● ***Write today for latest information on HALE Fire Pumps . . . Built in all Standard Capacities.***

NOTE: The lower black dotted line shows where both the new QL and previous types of pumps are bolted to chassis frame. Red lines show amount of space saved above new pump over other typical present day pumps in the same range as the QL.

HALE FIRE PUMP COMPANY

Conshohocken, Pa.

A Letter

ESTABLISHED 1888

MAXIM · MOTOR · COMPANY

BUILDERS OF MOTOR DRIVEN
- FIRE APPARATUS -
MIDDLEBORO, MASSACHUSETTS

Old and New Customers
All over
U.S.A.

Gentlemen:

For almost three generations, discriminating buyers have bought MAXIM Fire Apparatus. They have selected this equipment not because they always got the lowest initial price but because they realized that MAXIM products have two priceless ingredients -

1. Uncompromising Craftsmanship
2. Unexcelled Service Life

It is our policy to continue to merit the confidence, which hundreds of buyers have placed in MAXIM, by building apparatus that will do an outstanding job for your department at a minimum of service cost.

We believe that this policy of uncompromising quality and craftsmanship will continue to appeal to the discriminating buyer and the hard headed, farseeing purchasing executive.

Cordially yours,

MAXIM MOTOR COMPANY

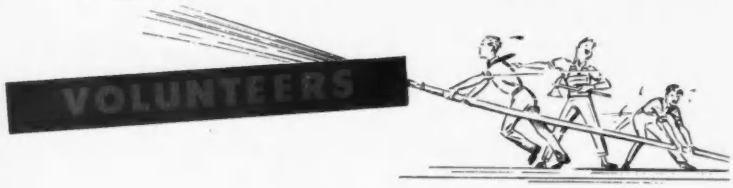
Ernest L. Maxim

Ernest L. Maxim
President

from Maxim

For the smaller community··

POSITIVE, INSTANT CONTACT with the



Provide your community—your property owners and your children — with all of the advantages of a big city fire alarm system.

At a cost well within reason, you can have a municipal fire alarm box system that will immediately announce the *location* of a fire.

Best of all, the smaller community can now get the basic fire alarm protection it needs, and extend the system circuit-by-circuit to avoid heavy investment at any one time.

As you know, almost every big fire *starts* as a *small* fire. Prevent delays with a positive, dependable fire alarm box system.

Keep small fires from becoming big fires — with an adequate fire alarm box system.

THE GAMEWELL COMPANY
NEWTON UPPER FALLS 64, MASS.
In Canada: Northern Electric Co., Ltd., Belleville, Ont.

CHAMPION FIRE APPARATUS

500 GALLON PUMPER

750 GALLON PUMPER

When you and the other officials of your town purchase a Darley Champion Fire Apparatus you are giving your community the best fire protection money can buy, and your taxpayers will like the savings.

Because we make both Fire Pumps and Fire Apparatus, we can and do give you everything of the best and save you money too.

When buying Fire Apparatus for your community, check and compare the Darley Champion with any other make. We welcome your comparisons first, and then our low quotation will surprise and please you even more.

A few Territories open for Sales Representatives. Write us.

Write for Fire Apparatus Booklet

AT YOUR SERVICE: Sales and Service Representatives — East, Midwest, North, South

ESTABLISHED 1908

High Pressure Fog Pumps

W. S. DARLEY & CO., Chicago 12

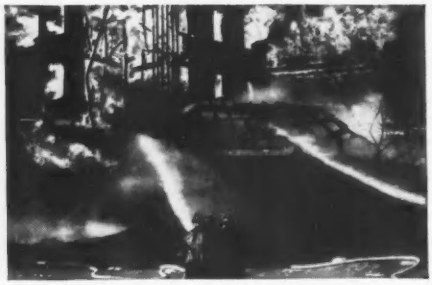
Factories — Chicago and Chippewa Falls, Wis.

Front and Midship Pumps

FIRE PROTECTION NEWS

NO. 1 IN A SERIES, PUBLISHED BY GRINNELL COMPANY, INC., PROVIDENCE, R. I.

Fire Razes Factory



Flames leveled two factories and several other buildings, despite valiant efforts of firemen to check the blaze. Damage was estimated in the hundreds of thousands of dollars. Several people were seriously injured. Another case of the high cost of NO SPRINKLERS.

313 Fires Cause $202 Millions of Damage

Last year hit a new, all-time high for "large loss" fires, those that exceed $250,000. A total of 313 big fires were reported in the United States and Canada. Most of the increase in the number of fires occurred in the mercantile classification, which jumped from 29 fires in 1953 to 54 last year. Warehouse and other storage areas rose from 48 to 54 and the transportation section climbed from 39 to 57. In commenting on the large fire loss, National Fire Protection Association said: —"Most of the large loss building fires in 1954 would not have occurred had the buildings been completely protected by a properly installed and maintained sprinkler system. The value of a complete sprinkler system is certainly obvious."

Chemical Plant at Height of the Fire

This is the way the Arnold Hoffman Chemical Plant in Dighton, Mass. looked while a fire "raged" inside. The fire, however, never amounted to much, because a Grinnell Automatic Sprinkler System went into operation, snuffing out the fire instantly. Damage was negligible and no one was injured.

FIRE PROTECTION IS GOOD BUSINESS

E. J. Meyers, Assistant Manager, Safety and Fire Protection Division, E. I. du Pont de Nemours & Company, gives his formula for safe plant design

Speaking before the Massachusetts Institute of Technology's Conference on Fire Protection Engineering, Mr. Meyers expressed some basic facts which deserve a wider audience. Excerpts from this speech follow:

"Fire protection has always been an important part of good business . . . fire protection begins with the design of the plant — buildings, equipment and processes. The object is to remove, as far as possible, the human factor by making protection permanent or automatic.

". . . In the minds of many, fire prevention and fire protection are confined largely to care in preventing or safe-guarding the common causes of fire, such as the use of matches, smoking, spontaneous combustion of oily rags, and of defects existing in lighting. To be effective, however, every factor affecting safety to either life or property must be included.

". . . The automatic sprinkler system is undoubtedly the most extensively used fire protection device. This is mainly due to the fact that it is automatic in action and always on the job in any part of the property equipped, provided it is properly installed and maintained. It prevents destruction of property, interruption to operations, and the loss of lives. A majority of fires are small at the start and can usually be put out with a small amount of water. The sprinkler automatically supplies this water at the needed time without the aid of human agency, provided it is a standard installation properly maintained and backed up with adequate water."

GRINNELL PROTECTOSPRAY SYSTEM COOLS OFF LP-GAS TANK CAR

This tank car full of liquefied petroleum gas is at a siding where its contents will be transferred to industrial storage tanks. The Grinnell ProtectoSpray System, in test operation, is a modern fire-prevention and fire-control water spray system.

Without such protection any leak brings the chance of fire or explosion. With the Grinnell ProtectoSpray System, the hazard is practically eliminated. The drenching water blanket provides instant cooling, to reduce tank pressures and prevent rupture. Positive air turbulence is created, even in still air, to help dilution of leaking gas by the inert gases present in air. Water-vapor dilution assists in thinning out gas-air mixtures toward the point where they will no longer burn. And fire, if it occurs, is localized, permitting safe disposal of the gas by burning where it escapes, thus reducing the fire-explosion hazards downwind or downgrade.

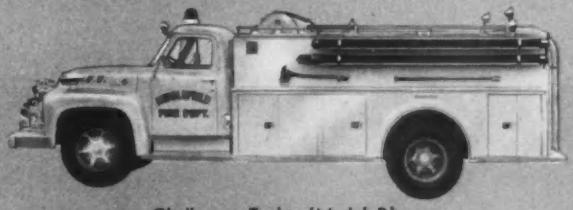
Grinnell ProtectoSpray is just one of the many systems engineered to protect special hazards. Water spray, air foam, carbon dioxide, and dry powder systems are available to protect all classes of hazards.

Look TO SHARPSVILLE FOR THE ULTIMATE IN FIRE-FIGHTING APPARATUS, *Custom made* TO YOUR SPECIFICATIONS

Custom Challenger

Challenger Delux

High-Pressure Challenger



Challenger Tanker (Model R)

Emergency Car

Closed Squad Car

Semi-Closed Rescue Truck

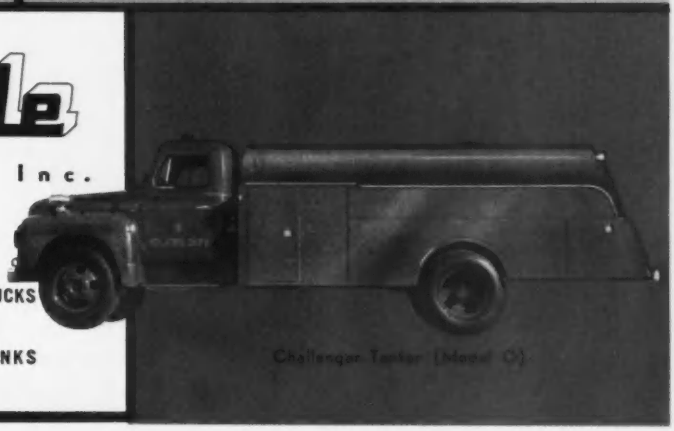
Sharpsville

STEEL FABRICATORS, Inc.

SHARPSVILLE, PA.

★

BUILDERS OF SERVICE, CRASH AND LADDER TRUCKS
VOLUME AND HIGH-PRESSURE PUMPERS
SQUAD AND EMERGENCY CARS • STORAGE TANKS



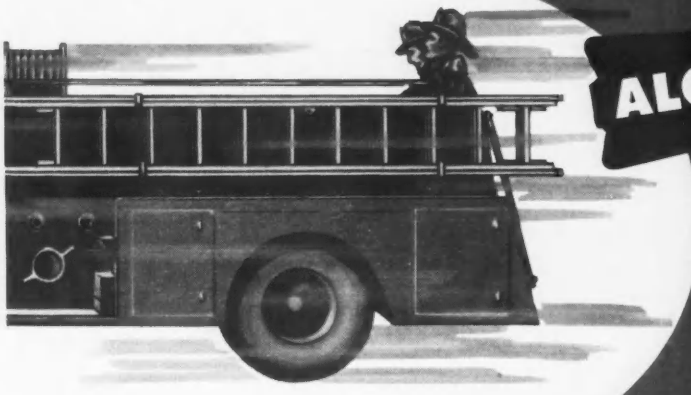
Challenger Tanker (Model C)

OFF TO A GOOD START!

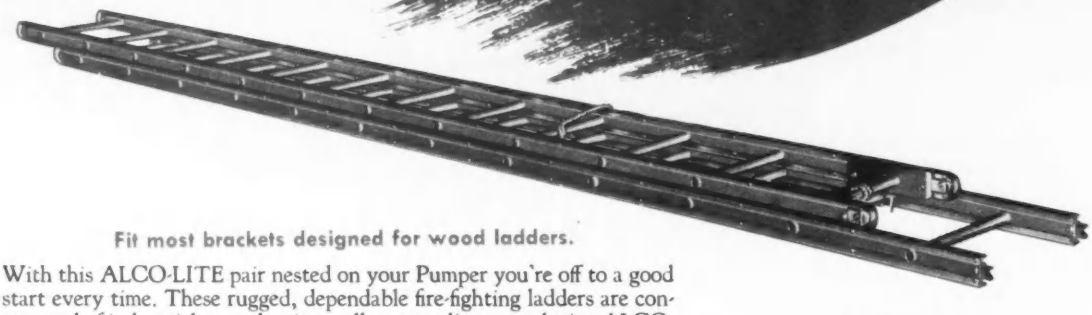
with

ALCO-LITE

PUMPER EXTENSION and PUMPER ROOF LADDERS



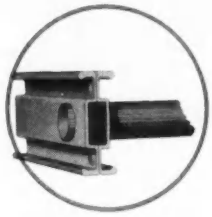
designed for short wheelbase Pumper Trucks



Fit most brackets designed for wood ladders.

With this ALCO-LITE pair nested on your Pumper you're off to a good start every time. These rugged, dependable fire-fighting ladders are constructed of industrial type aluminum alloy according to exclusive ALCO-LITE specifications. They won't rust, rot, splinter, spark or burn and require almost no maintenance.

The PEL and PRL Ladders are ideal replacements for your outmoded wood ladders or as original equipment on your new Pumper. Specify ALCO-LITE everytime. The nested thickness of the PEL and PRL Ladders is only $6\frac{7}{8}$".



SPECIAL RUNG CONSTRUCTION

Heavy corrugated 1" aluminum rungs are permanently attached to the double channel side rails with exclusive ALCO-LITE expansion bushing construction.

The pumper Roof Ladders are supplied with folding steel hooks.

original manufacturer of aluminum ladders

Aluminum Ladder Company

WORTHINGTON PENNSYLVANIA

MEMBER: METAL LADDERS ASSOCIATION

"750" SPECIAL FIRE ENGINE

FWD SPECIAL "750" Fire Engine *discharges 750 gallons per minute through a two-stage, series-parallel centrifugal pump with positive displacement rotary-type priming pump and by-pass relief valve.*

NOW! ..."BIG ENGINE" FIRE PROTECTION any size community can afford

Four Wheel Drive Fire Engines are *acknowledged* champions, coveted by departments all over the nation. But . . . until now, many smaller communities have felt unable to afford the big FWDs so proudly purchased by larger cities.

To meet this need, FWD engineers designed the *Special "750"*—real Four Wheel Drive fire protection for non-metropolitan fire districts *at ordinary commercial rear-wheel-drive costs!* This moderately priced pumper has all the basic equipment you need to fight fire fast, safely, efficiently . . . but even more important, the *Special "750"* is a genuine FWD Fire Engine—proud powerhouse for any fire department!

Four Wheel Drive permits higher average speeds—no frustrating slow-downs through tangled traffic. Slippery streets, mud or snow-clogged roads—none of these need slow that steady, mile-eating pace, for true Four Wheel Drive gives up to 82% greater controllable traction than rear-wheel-drive fire engines.

Give your community the extra protection it deserves . . . give your men the pride and security of an FWD . . . find out how easily the *Special "750"* fits into your budget. Ask your FWD Dealer. He knows!

America's Safest Fire-Fighting Apparatus

Write today for free folder with color pictures and full description of FWD's *new* SPECIAL "750" Fire Engine.

THE FOUR WHEEL DRIVE AUTO COMPANY, CLINTONVILLE, WISCONSIN, *Canadian Factory,* KITCHENER, ONTARIO

FOR FIREFIGHTING OR BOOSTER SERVICE the highly portable, light-weight Marlow Fire Pump can be quickly moved to a fire or water source that a pumper can't reach. For fire-fighting, the unit boosts hydrant pressure or pumps from any pond, or shallow well. Small departments can dispatch it to dreaded second fires. For booster service the pump can be carried by two men to inaccessible water sources. The pump pushes water up hills or over long distances to supply pumpers or tank trucks.

marlows are portable

The Marlow Fire Pump, weighing only 160 pounds ready to operate, *can be placed in service 30 seconds after starting!* Powered with an 8½ hp. engine, the unit runs unattended and delivers up to 100 g.p.m. at 80 p.s.i. It can be stored in pumper compartments or car trunks. Meets recommendations of National Fire Protection Association and performance exceeds minimum requirements. For details, see your Marlow dealer or write for Bulletin F-04.

MARLOW PUMPS • RIDGEWOOD, NEW JERSEY

DIVISION OF BELL & GOSSETT COMPANY • *Branch Factories: Longview, Texas • Morton Grove, Illinois*

CONGRATULATIONS

IAFC

The International Association of Fire Chiefs is to be commended for the splendid work it is doing toward the advancement of the Fire Service.

The Bi-Lateral Fire Hose Company says:

"Every Fire Chief should be a member of IAFC"

CALIFORNIA, LOS ANGELES
James Lowery
1915 S. San Pedro Street

COLORADO, DENVER
Fire Protection, Inc.
1017 Lawrence

CONNECTICUT, OLD GREENWICH
Orville A. Sawyer
P.O. Box 73

FLORIDA, CORAL GABLES
O. C. Wipper
P.O. Box 714

ILLINOIS, BARRINGTON
Great Lakes Fire Equip. Co.
Michael Dalton and Erv. Simek

INDIANA, INDIANAPOLIS
Midwest Fire & Safety Equip. Co.
1605 Prospect Street

IOWA, BELLE PLAINE
Earl Byers
710 17th Street

KENTUCKY, WINCHESTER
O. L. Gore
36 French Avenue

MAINE, WINTHROP
Blanchard Associates

MASSACHUSETTS, MEDFIELD
Charles H. Clougherty Co.
39 Miller Street

MICHIGAN BENTON HARBOR
Joseph M. Platte
1461 Ogden Avenue

MINNESOTA, MINNEAPOLIS
C. F. Cayer
2426 Clinton Avenue S.

MISSOURI, VERSAILLES
Interstate Fire Equip. Co.
L. W. Graves
Rockledge, Lake Road No. 16

NEW JERSEY, KEARNY
T. F. Murphy
71 Bennett

NEW JERSEY, LAUREL SPRINGS
Nat. Alexander Co., Inc.

NEW YORK, ELMIRA
W. J. Lawless
207 W. Third Street

OHIO, COLUMBUS
Birch Fire Equip. Co.
W. L. and Wm. Birch
P.O. Box 6604

TEXAS, DALLAS
Jno. T. Hanway
6403 Goliad

UTAH, SALT LAKE CITY
Universal Safety & Fire Equip. Co.
727 South West Temple St.

WISCONSIN, MADISON
James A. Fenton
114 Merlham Drive

BI-LATERAL'S DISTRIBUTORS AND DEALERS throughout the country join the Bi-Lateral Fire Hose Company in their full cooperation with INTERNATIONAL at all times.

BI-LATERAL FIRE HOSE CO.
20 NORTH WACKER DR.
CHICAGO 6, ILLINOIS
Sustaining member of IAFC

WIN A $100.00 SAVINGS BOND!

NAME THIS NEW WOOSTER BRASS NOZZLE

ONLY 3 SIMPLE THINGS TO DO

1. Review the features of the nozzle.
2. Fill out form listing your suggested name.
3. Mail to Wooster Brass before September 30, 1955.

Impartial judges will make decision on winning name by October 31, 1955.

Wooster Brass Division
Wooster, Ohio

Here is my suggested name for the new fog and straight stream nozzle.

Name_____

Title_____

Address_____

City_____ State_____

☐ I would like a demonstration of the nozzle.
☐ Please send additional literature and prices.

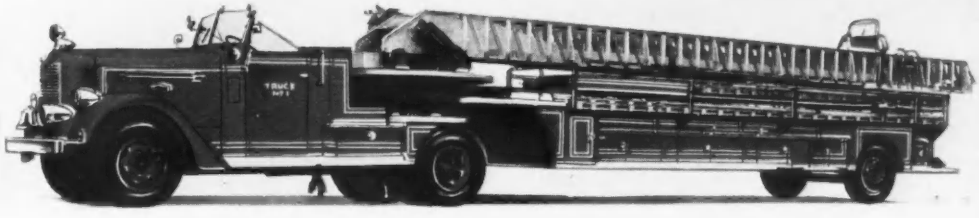
THESE ARE THE FACTS YOU'LL NEED TO KNOW ABOUT THIS NEW NOZZLE

- This is a "Flow-Rated" nozzle engineered for full use of pump capacity in 125 G.P.M. multiples.
- Less than one easy turn of outer barrel for complete fog pattern range. Barrel clicks into indicated positions for straight stream, 15°, 30° and 90° fog angles.
- Compare these 1½" nozzle characteristics at 100 psi.
  Solid stream projection 125 ft.
  125 G.P.M. fog with 30° angle
  45 ft. projection at 30° angle
- High volume excellent quality fog. Truly no other nozzle compares.

SEE THE NOZZLE AT THE INTERNATIONAL FIRE CHIEFS CONFERENCE AT OMAHA OR REQUEST A DEMONSTRATION BY YOUR WOOSTER BRASS DEALER.

WOOSTER BRASS
DIVISION
THE FYR FYTER CO. • WOOSTER, OHIO

Photo by Paul Thayer



The Pirsch Hydro-Mechanical Aerial Hoisting and Operating Mechanism is the World's fastest all-powered aerial ladder raising and extending device. Combined with the Pirsch lattice girder aluminum alloy aerial ladder it makes an unbeatable combination of speed and safety so essential when lives are at stake.

Additional information and specifications of Pirsch Aerial Ladder Trucks are available upon your request.

PETER PIRSCH & SONS CO. KENOSHA, WIS.

"BUILDERS OF AMERICA'S FIRST ALL-POWERED AERIAL LADDER TRUCK AND AMERICA'S FIRST 100' AERIAL LADDER"

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POSTMASTER: If undeliverable FOR ANY REASON, notify sender, stating reason, on Form 3547.

Fill in quantities of items you want, tear out and mail this blank to:

NATIONAL FIRE PROTECTION ASSOCIATION
60 Batterymarch Street, Boston 10, Mass.

QUANTITY

_____ 1. Poster — $2.50 per 100, $17.50 per 1000.
_____ 2. Facts About Fire—$2.00 per 100, $15.00 per 1000.
_____ 3. Display Card—25c each, discount for quantities.
_____ 4. Sparky Coloring Sheet—75c per 100, $6.00 per 1000.
_____ 5. Sparky Comic Book—5c each, $45.00 per 1000.
_____ 6. Sheets of Stickers—15c for sheet of 50, discount for quantities.
_____ 7. Sparky Coloring Book—5c each, $5.00 per 100, $45.00 per 1000.
_____ 8. Flyer—$1.00 per 100, $7.00 per 1000.
_____ 9. Blotter—$1.50 per 100, $12.50 per 1000.
_____ 10. Hello, I am Fire—5c each, $45.00 per 1000.
11. Inspection Blanks—8½ x 11
_____ (a) Sparky's Home Inspection Blank—$1.00 per 100, $7.50 per 1000.
_____ (b) Mercantile—$1.00 per 100, $7.50 per 1000.
_____ (c) Industrial—$1.00 per 100, $7.50 per 1000.
_____ 12. (a) Folder—$1.50 per 100, $12.50 per 1000.
_____ (b) Folder—$2.00 per 100, $17.50 per 1000.
_____ (c) Folder—$2.00 per 100, $17.50 per 1000.
_____ (d) Folder—$2.00 per 100, $17.50 per 1000.
_____ (e) Folder—$2.00 per 100, $17.50 per 1000.

NOT ILLUSTRATED BUT AVAILABLE

Comic Books—5c each, $45.00 per 1000.

_____ (a) Smokey Stover—"Hot Tips" on how to prevent fires.
_____ (b) Smokey Stover No. 2—"Hot Tips on Child Fire Safety."
_____ Fire Prevention Week Handbook—complete plans for a successful campaign—15c each.
_____ Preventing Home Fires—25c each, discount for quantities.

Send items marked above to:

(Please Print)

NAME _____

ADDRESS _____

CITY AND STATE _____

For Fire Prevention Week

October 9-15

This boy will soon be a familiar sight throughout the United States and Canada. He and his message, "Don't Give Fire a Place to Start," will be featured on the millions of printed Fire Prevention Week materials prepared by the National Fire Protection Association.

Thousands of fire departments are ordering the brightly colored posters, flyers, display cards and other items listed at left. Send your order now to assure delivery of the materials to your fire department in time for Fire Prevention Week.

Since many Fire Prevention Week activities are planned for the interests of children, many fire stations will be distributing the "Sparky" coloring books and comic book, the inspection blanks, and the new booklet "Hello, I'm Fire." There are also inspection blanks and folders especially prepared for industrial plants and mercantile shops.

Take a pen, now, and mark the items you need for best attention-getting in your community. Mail the blank to the NFPA today. *Orders for Fire Prevention Week materials cannot be accepted after September 22.*

Prices subject to 2% discount if payment accompanies order. All prices F.O.B. Boston. **ORDERS SHIPPED EXPRESS COLLECT.** NFPA members may receive single copy of all items gratis. Others may receive sample of all items except "Handbook" and Display Card (item 3) free upon request. Items No. 1, 2, 3, 5, 7, 9 10, 12(a) (b) (c) (d) (e) have space for imprints of names of campaign sponsors which may be added locally by purchasers.